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Postal Address: Box 8500, Ottawa, Canada K1G 3H9
Head Office: 60 Queen Street, Ottawa, Canada

Shaeffer, S.
Nkinyangi, J.A.

IDRC-213e

Educational research environments in the developing world. Ottawa, Ont., IDRC, 1983. 288 p. : ill.

/Educational research/, /social environment/, /developing countries/ — /research workers/, /research centres/, /organization of research/, /institutional framework/, /reference.

UDC: 37.001.5 ISBN: 0-88936-378-1

Microfiche edition available

Il existe également une édition française de cette publication
La edición española de esta publicación también se encuentra disponible

IDRC-213e

Educational Research Environments in the Developing World

Editors: Sheldon Shaeffer[1] and John A. Nkinyangi[2]

[1]Associate Director (Education), Social Sciences Division, International Development Research Centre, Box 8500, Ottawa, Canada.

[2]Research Fellow, Institute of Development Studies, University of Nairobi, Box 30197, Nairobi, Kenya.

The views expressed in this publication are those of the authors and do not necessarily represent those of the International Development Research Centre.

Résumé

La recherche sur l'éducation sert à plusieurs choses. Le plus souvent, elle sert à obtenir différents types de connaissances (sur la recherche elle-même, sur les éléments constitutifs et les problèmes d'un système d'enseignement, sur l'effet de nouvelles techniques et de réformes). Elle sert également à justifier une ligne d'action ou à assurer un avantage politique. Toutes les sociétés n'ont pas la même capacité en matière de recherche sur l'éducation (la capacité d'absorber des moyens de recherche, de faire de la recherche, de l'utiliser, puis de transmettre cette capacité aux générations qui suivent). Ces différences tiennent à la nature de l'environnement de recherche de chaque société : le lieu d'installation, la compétence et la diversité de son personnel de recherche ; la solidité et la cohésion de ses structures et de ses institutions de recherche ; le degré d'énergie et d'encouragement que suscite son climat de recherche.

Cet ouvrage présente des analyses de l'environnement de recherche sur l'éducation qui ont été réalisées dans neuf pays en développement, et faites en suivant un même plan d'ensemble. Les résultats qu'elles fournissent font ressortir clairement à la fois la diversité et le caractère unique des situations dans le Tiers-Monde. Elles font apparaître aussi, cependant, de nombreux points communs : que la recherche, au lieu d'être une activité neutre, est en fait très liée à des facteurs sociaux et politiques comme l'idéologie et la vision du monde, les modes de communication et les modes de décision ; que les donateurs et la communauté internationale ont une influence déterminante sur les orientations (choix du personnel, des institutions, des sujets et des méthodes de recherche) ; que dans une certaine mesure le développement de la capacité de recherche sur l'éducation d'une société peut être réalisé par le moyen de stratégies d'organismes nationaux comme d'organisations extérieures ; et que cette tâche exige que l'on apporte plus de souplesse et d'imagination dans la conception de ces stratégies, plutôt qu'essayer d'appliquer des solutions uniformes et simplistes à une question aussi complexe.

Resumen

La investigación educativa cumple con varios propósitos. El más generalmente aceptado es el de producir diferentes tipos de conocimiento (sobre la investigación misma, sobre el contenido y los problemas de un sistema educativo, y sobre el efecto de nuevas tecnologías y reformas), tanto como el de legitimar las directrices de política y ganar ventajas políticas. Las sociedades varían en sus capacidades para la investigación educativa — la capacidad para integrar la investigación en el quehacer investigativo, usarlo y luego reproducir esta capacidad en las generaciones futuras. Estas diferencias tienen que ver con la naturaleza del medio científico — el sitio, la calidad y la fusión de todos sus investigadores; el vigor y la cohesión de sus estructuras e instituciones investigativas; y el nivel de energía y estímulo que su medio ambiente genere para la labor de investigación.

En este libro, con ciertos ajustes, se aplica un marco general para el análisis de los medios en que se da la investigación educativa, a nueve países en desarrollo. Las descripciones detalladas que resultan dejan ver claramente la variedad y peculiaridad de los medios en que se produce esta investigación en el tercer mundo. También permiten ver una serie de rasgos comunes: que la investigación mas que una actividad neutral, está muy vinculada a factores políticos y sociales como ideología y visión mundial, patrones de comunicación y formas del proceso decisorio; que los donantes y la comunidad internacional en general juegan un papel crucial en cuanto afectan la fortaleza de las capacidades e instituciones de investigación y la naturaleza de los temas y las metodologías de estudio; que, hasta cierto punto, la ampliación de las capacidades de una sociedad para realizar investigación educativa está en consonancia con las estrategias de las organizaciones externas e internas por igual; y que esta tarea exige mayor flexibilidad e imaginación en el diseño de tales estrategias que la adopción de soluciones uniformes y simplistas para un asunto tan complejo.

Contents

Foreword 5

Introduction **Sheldon Shaeffer** 7

Colombia

Strengthening education research capacity: the Colombian case, 1960–81 **Clemencia Chiappe and Robert Myers** 27

Mexico

Analysis of educational research capacity in Mexico: guidelines for its development **José Luis Quintero Hernández, Carmen Tamez Muñoz, Patricia Medina Pegram, and Ana María Garza Villarreal** 51

Caribbean

Research environment in the English-speaking Caribbean **Errol L. Miller** 83

Thailand

Research environment study: Thailand **Patya Saiboo, Supang Chantavanich, and Utumporn Thongutai** 113

Jordan

Analysis of educational research capacity in Jordan **Farid Abu Zeineh and Derar Jaradat** 149

Kenya

Educational research environment in Kenya **David Court** 165

Who conducts research in Kenya? **John A. Nkinyangi** 191

Uganda

Educational research capacity and environment in Uganda: 1970–81 **Catherine Namuddu** 215

Mali and Senegal

Problems hampering the development of educational research capacity in Mali and Senegal **Miala Diambomba** 235

References 283

Foreword

The contributions to this volume, and the late 1981 meeting at the International Bank for Reconstruction and Development (IBRD), Washington, at which they were first examined and then discussed, represent a culmination of some 4 years of closely coordinated work involving the Education Projects Section of the World Bank, the International Development Research Centre's (IDRC) Research Review and Advisory Group (RRAG), IDRC's Education Program, and numerous educational researchers in countries around the world.

The idea of identifying and assessing elements comprising a national "research environment" was developed first by the Review Group, and owes much in particular to Dr Pablo Latapi of Mexico, an early member of the Group. A grant from the World Bank enabled the Review Group to commission a number of early case studies of donor agency efforts to increase national educational research capacity in East and West Africa, Southeast Asia, and Latin America. A subsequent meeting held at the Ford Foundation offices in New York drew together the threads of these experiences and pointed most importantly to the necessity of understanding the overall "environment" if any such efforts were to be successfully undertaken. In part based on this meeting, Sheldon Shaeffer's (1980) monograph "Increasing National Capacity for Educational Research: Issues, Dynamics, and Alternatives" took the idea a step forward. With additional support from the Rockefeller and the Ford Foundations, the decision then was made to undertake the number of detailed national studies found in this volume, both as an attempt to understand more comprehensively the concept of the "research environment" and to serve as particular references to educators and others working within the countries in question.

There are of course a number of shortcomings attached to the exercise as a whole. The central concept has been recognized throughout as a somewhat artificial one, and its subdivision into national boundaries a matter of convenience rather than reality. More important, the exercise rests on the assumption that educational research is in all instances a valuable and indeed necessary undertaking, whereas participants at Washington and elsewhere have been quick to point out that in many situations it is a luxury and that attention instead should be directed at already identified problems susceptible to relatively straightforward solutions. All, however, have been in agreement that the fostering of a tradition of research — that is, of rational inquiry into social issues — should be a goal of researchers everywhere; further that it falls to the researchers themselves to ensure that their work increasingly is perceived as a normal and useful undertaking.

This last point may even have gained importance given a number of social, political, and economic developments in the time since the exercise first began. One thinks not only of political shifts that have made such rational inquiry extremely difficult to undertake in some areas and evidence of it frequently suppressed or distorted. Economic developments have tended to dry up

discretionary funds once available for research. Partly reflecting this, changes within donor agencies have resulted in some agencies virtually withdrawing from support to social sciences' research in developing countries, including education, and others tending to direct their interest in research toward particular issues and methods. The time at which this volume is being published is not, in brief, an especially easy one in which to be a researcher. Many of those associated with this volume would argue, however, that it is precisely this fact that gives importance to its content and to the continuing pursuit of what one contributor terms "a tolerable intellectual climate." It is hoped this volume will provide a contribution toward this widely shared end.

Susanne Mowat
Deputy Director
Social Sciences Division
IDRC

Introduction

Even the most casual observer of the world of educational research must notice the wide variety of circumstances and settings in which such research takes place: the cool, antiseptic efficiency of the North American computer centre in contrast to rows of clerks and coders manually tabulating piles of data in crowded, stifling offices in much of the developing world; the multidisciplinary foreign research team fanning across the countryside in search of a representative, random sample, recorders and cameras in hand, versus the single, indigenous student or faculty member doing research at nights or on holidays using the cheapest, most available sample he or she can find; and the externally funded research centre, with consultants, libraries, landrovers, and the luxury to do research, across the road from the locally supported faculty of education where there is none of the above and where lecturers spend their spare time correcting "A" level exams or queuing for gasoline, medicine, and automobile parts.

The environments for research are everywhere different. Innovative research done in some countries is not imaginable (or even permitted) in others; complex statistical analyses of national survey data, feasible in some bureaucracies, are not possible in others where even the accurate aggregation of data has not yet been achieved; and research as an unpaid, vacation-time activity in some societies is incomprehensible in others where research is literally a subsistence activity.

But in much of the developing world, research environments are also in many ways the same — burdened by the same weight of colonial dependency, underfinanced, and with products undervalued and underutilized. The analysis of such environments for the sake of assessing whether and how they might be changed to enhance national capacity to carry out educational research is a difficult but critical task. It is also the primary purpose of this book.

The goal of this exercise has not been to compare the nature or quality of research in different countries but rather to try out a framework for the analysis of a given environment for educational research — who is doing research, in what kinds of institutions, under what conditions, with what skills and competencies, for what purposes, and with what effect. The assumption is that knowledge of this environment can lead to an assessment by governments and donor agencies alike of how best to enhance local capacity to define, analyze, and resolve educational problems, in short, to "do" educational research. A further assumption is that such research will uncover information that can be used by a range of people, from national policymakers to classroom teachers, to increase equity in the educational system and improve the quality of teaching in the

Sheldon Shaeffer Social Sciences Division, International Development Research Centre (IDRC), Ottawa, Canada

schools. Under these assumptions, the more research there is, and the better it is, the greater will be its impact on the education system.

Enough evidence has accumulated in recent years to show that this conclusion is a tentative, and tenuous, one. Major decisions about education are daily made by national bureaucrats and international donors without benefit of, or in the face of, research findings. Political and economic relationships, both national and international, frequently have greater effect on the structure and content of education systems than the rational, scientific analyses of educational reality that research is presumed to produce. The assumption, therefore, that better research will lead to better policy is a naive one, but one that is made every day and that has led to large and often inappropriate and wasteful investments in training, institution building, and research support.

But this assumption is not totally untrue. Some research has led to "better" policymaking and "better" teaching; even more, perhaps, has debunked conventional wisdom about educational outcomes or about the development process itself. Research may have produced few universal solutions to educational problems, but it has helped to demonstrate that the belief that simple solutions exist is largely unsupported. Research has shown how complex reality is; this, in itself, is an important piece of knowledge making all of us involved in the process of development a bit less sure of what we are doing and why we are doing it.

A related assumption is that weaknesses or gaps in local environments for research can be easily identified and then strengthened by relatively simple investments of time and money. There once was a time (not too long ago) when donor-agency efforts to improve the quality of educational research in a developing nation were limited to sending a few staff members of its leading university or fledgling research and development (R&D) centre to a school of education in a First World country to receive an advanced degree in curriculum construction, educational psychology, or school administration. The new graduates would then return home, diploma in hand, to find themselves labouring under an impossible burden — the expectations of their superiors and their donor-agency sponsors that, through research, they could accurately diagnose and then cheaply and easily solve their country's educational problems.

Today, as the issues of educational development — the debate between quality and quantity, the problem of equity, the competing demands of academic and vocational training — are becoming more complex, so, too, is the problem of developing greater indigenous research capability. What once was considered a simple matter of increasing the number of foreign graduate degrees in education has now become a much more elaborate and time-consuming task of describing, evaluating, and then developing a national research environment that will help guarantee the more effective generation, conduct, and use of educational research.

But as the task has become more difficult, interest in it has also grown. For practical, financial, and even ethical reasons, both local governments and foreign donors are beginning to recognize that much more effort must be made to enhance local capacity for educational research and indigenize the research process: to train local researchers in the analysis and interpretation of their own environment, to adapt foreign methodologies and assumptions to local conditions or develop truly indigenous approaches to research quite different from foreign models, to monitor and evaluate educational systems made particularly complex by the rapidly changing societies in which they are developing, and, in

general, to eliminate dependence upon the expertise and funding of foreign agencies.

The purpose, therefore, of this exercise has been to develop a framework for the analysis of a given environment for educational research in order to devise strategies for enhancing national capacity to do such research. The hope has been that with such a framework, the analyses produced and the strategies devised would be more sensitive both to the unique natures of each individual environment and to the national and international conditions of politics and economics that influence and constrain these environments. The framework that follows and the case studies that are built upon it (or occasionally consciously reject it) should, therefore, be judged in terms of the new knowledge and understanding that they bring to bear on such a complex issue and the sensitivity they demonstrate to the historical and contemporary forces that dominate or influence the social reality of the countries described.

Analytic Framework

Definitions and Components of Capacity

Research

Research is all things to all people, differently perceived, defined, and classified by producers and consumers, participants and subjects, and academics and policymakers. Too much concern for definition, if not a dangerous thing, can often be a fruitless and frustrating activity, obscuring the very concepts being defined. To prevent some of this frustration, the definitions used here are from another source, that of Vielle (1981c), who sees research as "international and systematic activities of search that lead to the conceptualization, expression, design, and production of something new" (Vielle 1981c, p. 6). Under this broad definition, he describes five kinds of research, classified as to their purpose. These are broadly paraphrased and simplified below.

Research about research: to analyze and assess research orientations, strategies, and diffusion in relation to underlying theories and assumptions, organizations and procedures, and achievements. Such research ranges from bibliographies of published research to state-of-the-art papers on research methodologies and findings, and from evaluations of research policy to studies in the science of knowledge.

Content research: to describe, inventory, and analyze educational systems; explain the interaction of variables that compose them; understand their interaction with the world around them; and measure their internal efficiency and external effectiveness. Such research can be "basic" to the extent that it explores, for example, comparisons between how children learn at home and at school or the transfer of skills gained from literacy to other "mental processes." It can be problem oriented to the extent that it attempts to identify underlying difficulties and unanticipated complexities in the educational system; it may, for example, discover that rural children do more poorly in school because of sociocultural as well as economic reasons, or that, contrary to popular belief, children achieve more in large classes than in small ones. Content research can also be policy oriented to the extent that it raises doubts concerning current educational practices. For example, research on the interference between home and school languages may bring into question school language policies, and findings about classroom size may make educators move more slowly toward the improvement

of teacher–student ratios or even reexamine their definition and measurement of "achievement."

Research for planning: to evaluate educational systems and diagnose their problems for the purpose of designing educational plans and programs, making forecasts, and formulating goals and strategies for decision-making and action. This type of research might delve further into problems uncovered in content research to develop goals and plans for future reforms.

Evaluative research: to introduce and assess changes in the content, methods, instruments, and technologies of education. This research, which Vielle calls "instrumental" research, is policy oriented and focuses on the evaluation of educational projects and reforms rather than of entire systems. A large percentage of donor-funded research falls into this category.

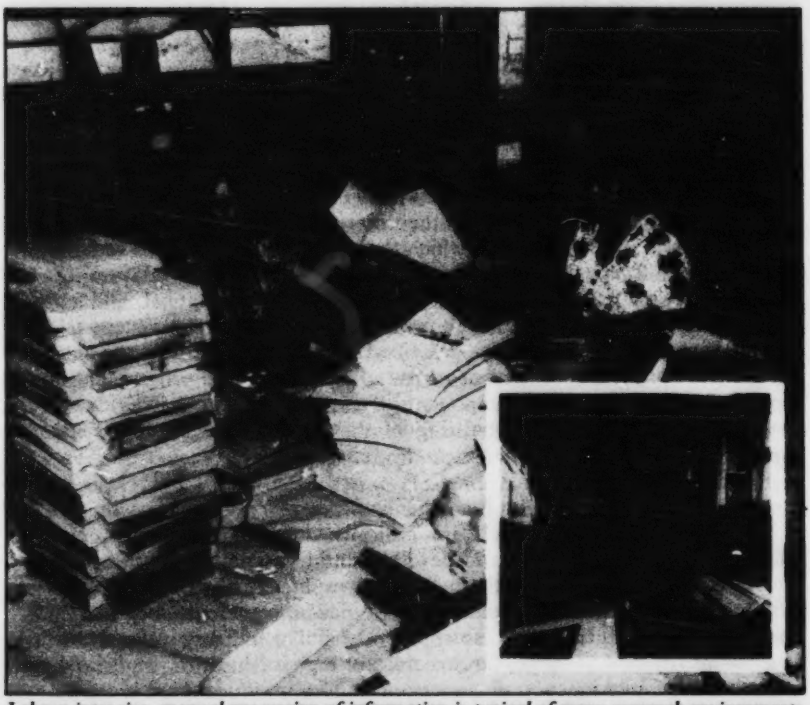
Action research: to introduce modifications directly into practice, often in new and experimental forms, and often as a "community activity" in which affected participants interact through (and are often trained by) the research process. A common example is the development of nonformal education programs in which new learning techniques are introduced directly into ongoing village activities and in which researchers, facilitators, and learners alike participate in the development and evaluation of the new techniques.

These categories, of course, are not mutually exclusive, nor are their boundaries sharply defined. Rather, they are interactive and overlapping. One type must often be done before another, often as a different stage of the same research project, and initial findings from one type of research may require further research in the style of another. Content research on language learning, for example, may be needed before research for language-education planning is begun or after evaluative research has shown the failure of new language-teaching textbooks.

Other categories of research might well have been used (and are used in the case studies that follow): by method (reflective vs. survey research, qualitative vs. quantitative), by issue (secondary education, adult education, curricular studies), and by underlying discipline (economics, sociology, politics).

The lesson is that any categorization of research, including that already described, is inherently oversimplified. What is important to understand is that such classifications should not be seen as prescriptions for future efforts but rather as tools for analyzing what is or is not being done in a particular setting and why. There are many varieties of research ranging from simple information gathering to complicated knowledge production; one variety usually builds upon or interacts with another, and too much emphasis on one variety at the expense of another (such as too much donor focus on evaluative research) can be a dangerous thing.

Vielle's definition of research as "intentional and systematic activities" should not be taken to mean that it is always a neutral, scientific activity. Research is very much a cultural phenomenon tied to subtle but significant factors such as ideology and worldview, communication patterns, and decision-making styles. More obviously, research is also a social and political process. The funds it consumes and the knowledge it generates represent power, and it can be used (some might say abused) to promote dialogue and induce a particular climate of thought and action, to rationalize policies and legitimate decisions, and, as propaganda, to gain personal influence and win political battles. Research, in other words, is seldom the neutral and benign process so often claimed by the scientific community or assumed by donor agencies.



Labour-intensive, manual processing of information is typical of many research environments in developing countries. The introduction of modern technologies, however, is radically changing the content and methods of educational research.

Capacity

At first glance, the term capacity brings to mind ability or competence, and research capacity, the ability to diagnose problems, analyze relationships, and arrive at logical conclusions. It is, however, more than this, because capacity is also related to the power to hold, absorb, and contain. When we speak of a farm's agricultural capacity, we are thinking of the number of agricultural inputs (fertilizer, seed, water, and labour) it can effectively absorb, and the amount, the kinds, and the quality of crops it can produce. Similarly, when we speak of a society's capacity for educational research, we are talking about the number of inputs (funds, facilities, personnel) it can effectively absorb and the amount, the kinds, and the quality of educational research it can produce.

Specifically, a society's capacity for educational research is: the extent to which it is able effectively to use relevant inputs; generate, conduct, evaluate, and use educational research; and then maintain and periodically renew these abilities. Although the term capacity is often used to refer to institutions and individuals as well as to societies, here its use will be restricted to the societal level. Based on this more limited definition, we will, therefore, talk about improving individual research skills, building research institutions, and enhancing or increasing a society's capacity for educational research.

Components of a Research Environment

In the past, activities to increase a given country's capacity for educational research have usually focused on the technical skills and competencies of individual researchers or the physical development of research institutions — very specific parts of the more general environment for research. It is clear now that such a narrow view of capacity, one often taken by donor agencies, is inadequate. Not only are the requisite individual competencies more varied and the institutional factors more complex than originally imagined, but also, because researchers and the structures in which they work do not exist in a vacuum, the development of capacity for research must be considered in relation to what might best be called the research climate — the social, political, and cultural context that surrounds the research process. A given society's capacity to carry out the various kinds of research described, therefore, depends on the nature of the general national environment surrounding the research process and on the quality of several particular components of this environment — individual skills, the structuring and institutionalizing of these skills and of other necessary inputs, and the nature of the research climate.

General Environment for Educational Research

Environments for research are radically different from one society to another. Historical, cultural, and developmental variation has produced very diverse environments among the major geographical areas of Latin America, Africa, and South and Southeast Asia. Even within these areas great variety exists. Malaysia and Indonesia, so apparently similar in many ways, share little in terms of colonial heritage, the structure of higher education, and the nature of their ethnic relations — all important factors in educational research and planning. The three different political milieus found in Chile within the last decade and the quite different settings of Francophone and Anglophone West Africa make clear the uniqueness of various research environments over time and space and the need to analyze carefully the characteristics of such environments before identifying and planning capacity-enchancing projects.

Context and Nature of Development

An understanding of a research environment requires an understanding of the nature and historical forces that have shaped a country's contemporary condition. What, for example, is the sheer size and physical geography of the country, and how do these relate to the scope of its development? Those of India, for example, are different in kind as well as degree from those in nearby Sri Lanka, and those of compact Malaysia differ from those of widespread Indonesia. What is the general level of national development, both actual and potential, and the state of ethnic and religious relations, both constitutional and real? How competent and sincere is the government bureaucracy in pursuing development and equity? How open is the system to informed criticism and change? How well-developed are other subsystems within the society — agriculture, health services, transportation, business, etc.?

More subtle, perhaps, are factors related to ways of thinking and acting. Different cultures are characterized by different styles of communication and different patterns of planning, making decisions, and accomplishing tasks — processes all particularly important in research activities. Highly hierarchical bureaucracies (such as Indonesia's) plan and implement policies in ways different from more democratic ones (such as Venezuela's); officials of societies where

the avoidance of open conflict is particularly valued (as seen in much of Southeast Asia) will arrive at decisions and react to frank criticism in quite a different manner than those of societies where frank exchange is permitted or even welcomed. The various modes of thought — traditional, progressive, and nationalistic — described in the Caribbean case are an important example of how patterns of experience can shape analyses of contemporary problems.

Of great importance in this regard is the nature of the colonial and postindependence periods of national development. Too often neglected is the great and often devastating impact of colonial exploitation and influence not only on the economy and political traditions of a nation but also on the structure of its bureaucracy, the nature of its educational system, and attitudes toward the conduct and utilization of research. It is no accident that Francophone and Anglophone West African nations, so often alike in indigenous culture, are so different in contemporary academic and bureaucratic life.

Postindependence history has equally affected research environments. Uganda and Kenya, similar in many ways at the time of independence, have faced very different struggles in the past 2 decades, the former only now emerging (perhaps) from the near death of its academic community, the latter wondering how to sustain its hard-won diversity and strength.

The Education System

The generation, conduct, and use of educational research will reflect in many ways the state of the education system as a whole. Size again is a differentiating factor, with the number of teachers in some countries exceeding the number of pupils in others, a burden for educational administrators and researchers alike. It is important to understand, therefore, what are the numbers that describe the current state of educational development (enrollments, budget alterations, flows, ratios, efficiency, etc.), what objective indicators are available to describe the problems of quality and equity, and what is the condition of educational facilities, texts, curricula, and the teacher training system. Because research itself must be planned and managed and is meant to influence planners and managers, what is the quality of these layers of the education system, both horizontally, across bureaucracies, and vertically, from the central Ministry to the village school? More subjectively, what is the morale of the system, particularly of its teachers, and how do citizens in general view education and its role in their own development and that of their nation? Answers to questions such as these should produce a kind of sector analysis of education — a necessary context against which the state of educational research can be viewed.

An important consideration is the often serious disjunction between the education system left behind by colonial administrators, attuned to the structures, needs, and examination criteria of the metropole, and the development needs of the nation itself. Reorienting a system labouring under such a colonial tradition and run by managers who consciously or unconsciously adhere to it in spite of its inappropriateness to local conditions is a difficult task.

The Research Climate

Any analysis of the climate or "culture" of research presents special difficulties, primarily because it can be easily influenced by the background and bias of the analyst. The first questions must delve into history and ideology, precolonial, colonial, and postindependence. What is the tradition of inquiry and the style of logic in the indigenous culture and how were these affected by the traditions and styles of the colonizer? What values and assumptions today

underlie the processes of inquiry and experimentation, data collection and knowledge production, and human interaction and social change, and from where do these values and assumptions come? Are they positivist, functionalist, and gradualist in orientation, or are they based on the Marxist ideology and conflict or dependency theory? Are they Western in origin (either American or European), or do they yet reflect something of the indigenous culture? How do these assumptions relate to the value placed on informed criticism, research, and reform in general and various kinds of research in particular? Finally, is the research process dominated in some way by a political, social, and intellectual elite trained in one or another tradition; is research allowed to proceed from several ideological or methodological perspectives at once; and is it used for one or another political or social end? A climate influenced by a Catholic colonial tradition might differ in these aspects from a climate characterized by Protestant traditions, and an Islamic climate for research may differ from a Buddhist one.

The answers to these questions lead to more specific questions concerning both the nature of the research community and the sophistication of the research process. What is the character of exchange among various kinds of researchers (do they evaluate and criticize each other?), between researchers and consumers, and between research institutes and the government? What role do foreign researchers play in the research process? Who contracts or requests research (policymakers, practitioners, or universities), and how is it rewarded (promotion, fees, or merely collegial recognition)? How is research funded, what percentage of research funding derives from local sources (rather than foreign donors), and what is the ratio of research locally funded, externally funded, and independently funded by the researchers themselves? Does such funding stimulate imaginative, independent research or restrict it to particular subjects and methods? From another perspective, is education itself seen by the government and the people to contribute to individual mobility and national development? A government that believes that education can solve all of its problems may treat research differently than one more skeptical in its views.

Finally, from another direction, what ties and interactions exist among educational researchers and those in other subsystems and disciplines; specifically, to what extent do social science and social scientists inform educational research and vice versa? What ties and interactions exist with the international educational and social science communities; specifically, what influence have these communities had on the topics and methods chosen for local research and the standards used to evaluate research results?

The Research Process

If the analysis to this point has focused on the setting and climate within which research occurs, what follows is the analysis of the research act itself: the kinds of researchers and skills available, the institutionalized arrangements in which they work, and the kinds of research desired and actually done.

An analysis of the research environment must include an inventory of the available mix of individuals and skills. Who is doing research, what are their social and academic backgrounds, what skills do they possess, and where did they learn these skills and to what extent are these skills now taught within the country? In this context, the focus is on educational and disciplinary training and competencies, skills in conceptualization and analysis, and the inventory of methods, tools, models, and theories available to and used by researchers. Included also must be inquiry about entrepreneurial skills — the ability to

present findings to different audiences and to "sell" research. What we are trying to determine with these questions is the quality and richness (depth and breadth) of the critical mix of educational researchers available, both in general and at specific institutions or bureaucratic levels.

Individual Skills and Competencies

Before educational researchers can become truly competent (perhaps even before they learn any technical research skills), they must first be aware of the nature of the research process itself. This is, in essence, the first stage in acquiring a research mentality — appreciation for the logic, systematic nature, and efficacy of research, and an understanding of its basic activities: questioning and exploring, building on the past, and being open to other views of the world and to cooperative relationships with other knowledge seekers. For some members of a research environment, such as decision-makers, appreciation and understanding may be enough; for active researchers, however, it is only the beginning, the foundation for a number of specific skills. These include:

- Skills specific to educational practice, such as curriculum development, teacher training, test construction, etc.;
- Skills specific to certain social science disciplines, such as anthropology, sociology, and economics, which are instrumental in relating education to the world around it;
- Skills specific to certain methodologies, descriptive (ethnographic recording, observation, etc.), inferential (sampling, survey techniques, questionnaire construction, and statistics), and experimental;
- Conceptual skills needed to envision the connections between school and society, identify researchable questions, and choose an appropriate research methodology;
- Analytical skills needed to evaluate the ongoing research process and interpret results; and
- Image management skills, the often neglected ability to present information (as well as the research process itself) in ways appropriate and intelligible to different audiences.

Two points about this skill component of the research environment are important here. First, the nature of this component is particularly complex. For example, although there are basic conceptual and analytical skills required for any research activity, the professional implementation of different varieties of research (à la Vielle) requires quite different mixtures of skills. Also, although there is some basic skill level required for every participant in the research process, not every researcher need possess each kind of skill.

Second, in discussing attempts to enhance a society's educational research capacity by improving research skills, we must deal with the concept of "critical mass." Too often, such a mass is seen by both donors and education ministries in purely quantitative terms — the availability of enough trained researchers, a number that supposedly varies from country to country. What is important, however, what makes the mass truly critical, is not only an adequate number of trained researchers, but an adequate, rich mix of the skills (educational, disciplinary, methodological, etc.) described above. It is this "critical mix" of skills, then, that becomes a necessary condition for a mature research environment and for the development of its capacity for educational research. Needless to say, such a mix will vary from one country to another.

Institutionalizing and Structuring of Research

This mix, however, is not yet a sufficient condition for capacity. Individual educational researchers, no matter how skilled, will likely remain isolated and ineffective unless brought together by some critical bond that provides important organizational inputs to their efforts and some structure and institutionalization to the research process. The required organizational inputs (the nature of which will again vary from country to country) are quite obvious:

- The availability of a good data base and the institutional ability to collect, process, store, and retrieve data:
- Relevant literature (journals, libraries, manuals, etc.), both indigenous and foreign;
- A trained support staff;
- Equipment and facilities, from the basic (adequate work space) to the sophisticated (videotape machines and computers); and
- Funds, for research expenses, salaries, etc.

The structural and institutional factors that are needed to bond individual researchers together are more difficult to describe. What is clear is that such institutionalization does not necessarily require an institution. In some settings, informal clusters of researchers, based, perhaps, on shared experiences and common perspectives gained in foreign study, may be the best (or only) way to organize educational research. But other options, or combinations of options, are possible: professional organizations or networks, government R&D centres, and private or university research units.

What is common to the successful examples of such institutional arrangements are several factors that include:

- The collecting and balancing of skills and other inputs within an institution or bureaucracy and across institutions or bureaucracies;
- The division of labour and responsibility for various kinds or parts of research among different kinds of institutions and between the centre and the periphery;
- Effective leadership able not only to guide research but also to manage personnel, administer a bureaucracy, and represent the institution's best interests to the outside world;
- Channels of diffusion and networks of communication among researchers, institutions, and levels of the bureaucracy; and
- The gradual strengthening of fragile research structures into stronger ones, through a minimum of guaranteed funding, stable leadership, and the ability to train a younger cadre of researchers.

A critical mix of skilled researchers requires some critical bond to organize and structure their efforts. Most generally, the mix must come before the bond, the researchers before the institutions; where this was not the case in the developing world, the landscape is littered with shells of institutions (such as national research coordinating agencies) built by donor agencies before there were trained researchers to fill them. But the dynamic is interactive: more (and more sophisticated) skills can be developed within structured, institutionalized relationships; and such relationships are, in turn, bonded more closely together through further enrichment of the mix of trained researchers.

Performance of Research

Given an understanding of the individual skills, the structures and the climate characteristic of a research environment, we arrive at the crux of the

issue. What kinds of research are being done (generation and conduct), how good is it and how is its quality being judged (evaluation), and how does it relate to the information needs of the nation (use)? One level of this analysis requires data on the kinds of research being performed (or, for various reasons, not being performed), who is requesting it, and who is doing it. Where within the structural geography of the system — the universities, the bureaucracy, the private institutions, or the national and subnational levels of society — is there research about research, content research, research for planning, evaluative research, and action research? What are the topics chosen for such research, and what methods have been used? How much research, for example, is devoted to the internal efficiency of the education system and how much to its effectiveness in relation to the outside world? Can it, in fact, be called research at all, or is it rather data gathering for propaganda purposes? The mix of research types is important here. Neglect of basic content research, often considered a luxury of the developed world, and overemphasis on contract evaluative research where donor funds often lie, are common in the developing world. Such imbalances should be explored carefully in the analysis of any research environment.

More complicated yet is the problem of research quality. How is research evaluated — as a proposal for funding, during its performance, and as a finished product? Who sets standards for these evaluations, and how do they fit with the standards of the so-called international scientific community? What role do foreign researchers and donors play in the evaluation process?

A final aspect of research performance concerns its relevance, both to local development plans and to donor agency interests. To what extent have information needs been identified by the society and how closely does the research performed match these needs? Or does it instead fulfill other objectives — as the basis for further research, to fill gaps perceived by the research community, as comparative data for donor agencies, as propaganda, or as a mechanism for training? How does the occasional piece of research get used in policymaking? What chance encounter among research, policymaking, and funding cycles (as described in the Caribbean case) might help this process?

Donor Activities

A final part of this analysis of the research environment — after all the internal dynamics and relationships among individuals, institutions, and climate have been explored — is to examine the role of the foreign donor community. What has been the magnitude of funding and its successes and failures, both locally and externally defined? How are donor activities in research training planned and monitored? To what extent do donor representatives and local researchers and policymakers collaborate in this process? What role do donors play (and are welcomed as playing) in selecting topics for research, advising and training researchers, setting standards, serving as brokers or intermediaries among research units, communicating research results, and "selling" research as a valued activity? Most delicately, what special role have donors played in politically repressive societies, for example, sponsoring research projects when no other funds are available or training controversial researchers in safe havens abroad?

The definitional and descriptive part of this introduction is now complete. Educational research serves several purposes — most generally, to produce various kinds of knowledge (on research itself, on the content and problems of an educational system, and on the impact of new technologies and reform), as well as to legitimize policy and win political advantage. Societies differ as to

their capacity for educational research — their ability to absorb research inputs, do research, use it, and then reproduce this ability in future generations. These differences relate to the nature of each society's research environment — the site, quality, and mix of its mass of researchers; the strength and cohesiveness of its research structures and institutions; and the level of energy and nurturance generated by its climate for research. It is clear from this description that, in the attempt to enhance a society's capacity for educational research, there is no easy way to prescribe interventions, nor even to establish a simple sequence of actions, such as training new researchers, then building new institutions, and then improving the research climate. The components of a research environment are too closely interrelated for such a simplistic process, and the dynamics between these components and various kinds of research are too complex. What is, therefore, required in any attempt to enhance capacity for educational research is a more sensitive understanding of the complexities of a research environment and a more flexible, multidimensional approach to improving its several components — tasks in which neither local governments nor foreign donor agencies have shown much interest or skill.

Design of Strategies to Enhance Research Capacity

An analysis such as that already outlined — which is not only a study of society's education sector and an inventory of its research environment, but also an exploration of relevant aspects of history, politics, economics, and culture — will leave us with a great deal of data. It should also provide us with a complete picture of the present and potential state of a society's capacity for educational research. More important, it will help us understand why such capacity now exists and provide insights into what might be done to enhance such capacity in the future. A note of caution, however: not all of the factors discussed above lend themselves to action — either to corrective policies of the developing nation itself or to the projects of donor agencies. Some things, a given research tradition, culturally specific communication patterns, and decision-making styles, cannot (or should not) be changed. Other factors, such as historical prejudices against research, and political fears of its results, take time to alter; neither sympathy toward research nor an indigenous research literature can be developed overnight. But there are areas where interventions may produce useful results.

To discover such information as this and then assess strategies for further capacity building, we must take the data gathered in the analysis of the research environment and see what kinds of research are performed in different parts of a society's structural geography. Such differentiation occurs because of history (European social science faculties didn't do applied research, and neither do those of their former colonies), ideology (government research units avoid politically tainted action research), and expediency (subnational education offices are assigned only descriptive data-gathering tasks). Thus, we can find out what kinds of research (and how much) are being done in national and subnational bureaucracies, in social science and education faculties, and in teacher training colleges and private research institutes.

The example of Indonesia can be used to show the utility of this approach. Virtually no private research institutes exist in Indonesia (and none appears to be strongly desired). Historically, isolated bits of content research were done at various teacher training colleges (but none in university social science facul-

ties), and some research for planning purposes was done in the national bureaucracy. Not until the early 70s, however, was there any systematic content research activity at the national R&D centre of the Ministry. This was followed by the centre's increased activity in evaluative research (primarily on donor agency projects), the strengthening of several research centres at provincial teacher training colleges in content and evaluative research (first for local theses and then under national contracts), and the development of national and provincial planning offices in routine data gathering for planning purposes. Research about research and action research are virtually nonexistent.

By projecting into the future (based on interviews with Indonesian educators and researchers) and comparing these projections with the present situation, the following priorities might emerge: (a) the strengthening of content research at the national R&D centre (such as research on classroom interaction and teacher behaviour) to enhance its ability to inform policymakers on future education reforms, (b) the development of evaluative and planning research at local education colleges to increase the flow of accurate data to provincial planning units and policymakers, and (c) the expansion of simple content research and data-gathering capability at the district and subdistrict levels to improve the quality of existing data throughout the system. These priorities, then, would represent the focuses of future capacity-enhancing projects in Indonesia.

Once these focuses are chosen, it should then be possible to select specific capacity-enhancing activities. Given the desirability (for example) of developing university-centred research about research, or Ministry-centred content research, we can analyze what kinds of skills and research inputs, what structural/institutional arrangements, and what climatic factors can be altered to achieve these goals.

We can also see which aspects of the various components need to be developed most generally across all the selected focuses of activity (better leadership or research libraries, for example) and which are specific to one or a few (computers at the national R&D centre, or a professional educator's association). We can also see more clearly the dynamics and interrelationships that govern different parts of a particular environment; for example, that methodological and theoretical sophistication and variety depend greatly upon an extensive research library, and that an orderly division of responsibility among research institutions depends upon a climate characterized by close cooperation among researchers and policymakers. Based on these kinds of insights, we can set specific project priorities and sequences of activity. Which libraries or data sets need to be established first? Where should social science skills be improved first — in the government's research unit or at a leading university — and what structural inputs are required for this effort? Which climatic factors appear most amenable to change, and how might interventions elsewhere in the system affect these factors?

Once it is clearer as to which kinds of research at which levels of the structural geography most urgently need to be developed, and which specific components of the research environment need to be altered to foster such development, we can begin to design specific capacity-enhancing strategies. In training, for example, there are several possible alternatives: short courses, foreign-degree programs, and training on-the-job; introductions to research to increase the research mentality of consumers and policymakers; focused upgrading courses for skilled researchers; and training in qualitative or quantitative methods, in the general concepts of the social sciences or the specific language of education

specialization. In the institutionalization of research, other alternatives abound: strengthening old centres or building new ones; focusing on private or public institutions, national or provincial bureaucracies; encouraging local coordinating agencies and international networks; equipping research centres with anything from file cabinets to computers; and funding individuals or research teams, university or government centres, projects or programs, "safe" or "refugee" research, for the short term or for a continuous period of several years.

Obviously, not every alternative is suitable for every environment. Many, for example, would not work in poorly developed research environments, where neither research as an activity nor its results are particularly valued. In such environments, communication, diffusion, decision-making, and other similar processes are characterized by informal relationships rather than formal channels. The few researchers available are dispersed in universities, have little indigenous literature, and work primarily on institutional evaluations or outside contracts. Their skills are primarily (and necessarily) quantitative in nature, and their research is likely to be "quick and dirty." Some capacity-building efforts within this kind of environment would be quite inappropriate, for example, the building of "research about research" capability through specialized PhD training or the introduction of sophisticated equipment and the building of new research training institutions for complex content research. What might be more useful would be to develop capability in simple descriptive content research and in nonthreatening evaluative research for the purpose of building a standard data base and proving the usefulness of research to decision-makers. This might be done by providing research funds, encouraging communication among the indigenous researchers themselves and then with foreign researchers, training more researchers to the MA level, and upgrading older researchers in new skills.

Another environment might be one in which a critical mix of researchers with various educational skills already exists in central universities and research institutes; a data base, a growing indigenous literature, and funding are available; networks operate successfully within the research community itself and with other countries; and bits and pieces of different kinds of research are performed throughout the system. However, little of the research is informed by the concepts or methods of the social sciences, the research is too unsystematic and esoteric for policymakers, institutions (let alone problems) of the periphery are neglected, and the research done is based on the assumptions and values inherent in Western universities rather than on those of the indigenous society itself. Further staff development of the central research core would be less important here than an attempt to broaden the perspectives of its present researchers, deepen their involvement in indigenous problems, and more systematically organize the country's research program.

These examples point out clearly the great variety of alternative interventions that might be introduced in a given society to produce changes in the components of its research environment and, therefore, lead to greater capacity for educational research. All such possible interventions cannot possibly be described here; however, some of the case studies that follow describe various types of strategies that have succeeded or failed in individual research environments.

A common theme is the need for pluralistic multidimensional approaches to what we have seen is a most complex problem. Early efforts at enhancing educational research capacity focused largely on one-shot, unidimensional projects — training good individuals, often from several institutions, in edu-

cational specialties (usually educational psychology, curriculum development, and teacher training); building a research unit in a leading university faculty of education; or sponsoring national assessments of the education sector through government research or planning units.

The choice among such relatively narrow options was often dictated by the equally constrained nature of the research environment. In many countries, government bureaucracies were unresponsive; thus, a university, by definition, represented the only institution interested in inquiry, its faculty or school of education was usually the most applied department available, and its research institute's position outside of the government often made it more willing to engage in critical analysis, which are conditions often appreciated by practical, research-minded donors. In other countries, with more open bureaucracies (or weaker universities), a focus on government units was more logical. These units were part of the bureaucracy that permitted donors to operate, they were often charged by newly independent governments with wide-ranging assessments and reforms of the education system, and they usually were staffed by colonial-educated officials eager to maintain ties with Western peers.

Whatever the rationale, early funding for educational research focused narrowly on increasing competence in university-based educational specialties or in bureaucracy-based assessment and problem-identification skills. The results of such funding were soon evident: many university staff were trained to advanced degrees (often leading them to government positions), major assessments of education systems were completed, and institutes of research were established throughout the developing world.

What happened next, however, was not always anticipated or desired. Government R&D centres became saddled with compiling yearly statistical summaries, enrollment projection, and cost–benefit calculations, or with developing and monitoring massive donor projects in school construction, textbook production, and teacher training. At the same time, university-based researchers found themselves left with conceptual frameworks and technical tools suited to the development level and academic interests of the West and, thus, isolated from the more practical concerns and language of their peers. Neglected by both groups were genuinely diagnostic, problem-focused content research and rigorous evaluative research — both critically needed to explore the complex relationship between the education system and society and to assess the new reforms being rapidly introduced with large-scale donor assistance. What has become apparent, therefore, is the need for projects that move beyond unidimensional efforts to train individual researchers or build isolated institutions to more integrated, balanced efforts to attack the multiplicity of components — individual, institutional, and climatic — which compose a society's capacity for educational research.

Application of the Framework

Process

The process of applying this framework to a number of country studies has not been an easy or an entirely satisfactory one. The logistics of coordinating such studies — done by different kinds of individuals, over different lengths of time, with different levels of funding provided by different donors, and with

somewhat different understandings of the terms of reference and ultimate audience — have not been simple. Thus, there is no standardized approach or format for each study, which results in the ultimate richness of their variety.

Perhaps even more disconcerting, but as ultimately valuable, has been the realization that the exercise itself led to a degree of rigidity and inflexibility that is, in fact, the contrary of what was anticipated or desired. A better sequence might have been to do the country studies first, from which an analytical framework would have emerged, rather than the other way around. The shortcut of writing the theoretical framework first (albeit informed by briefer case studies of particular capacity-building strategies) and then foisting it upon the country study authors (of whom many chose to ignore some or most of it) was adopted instead.

Outcomes

From this experience have come two very important outcomes: a clearer understanding of the strengths, inadequacies, and even dangers of the approach, and a number of specific summary conclusions across the country studies themselves. A framework such as this appears to be a valid tool for analysis if the purpose of the exercise is to draw a map of the world of educational research at a given point in time. Much like an instrument-bound analysis of classroom interaction, we get a "snapshot" of ongoing activity of who is doing what and where. This in itself has considerable value, but as description, not as judgment. Any evaluation of the environment for the purpose of intervening within it, just like any evaluation of a classroom done for the purpose of retraining its teachers, can only be carried out if the framework of analysis is expanded to include a variety of societal factors, both national and international in nature. What is needed, in other words, is rich, descriptive analyses of the context and process (cultural, historical, and educational) in which the current condition of education research is embedded. Educational research capacity and the environment that determines it can only be understood if seen against cultural attitudes toward research, historical and external influences upon its practices, and the educational system that becomes its focus of attention.

To borrow a term from anthropology, an *etic* description of a setting (one done by outsiders) has a certain validity as description if the authors admit that the definitions, the categories, the frame of reference, and the interpretations are theirs as outsiders. An *emic* description, and any evaluation that grows from it, must use the definitions and categories of the insiders, which a predetermined framework for analysis with its own neat checklists of items assumed as necessary for a mature research environment does not recognize. Thus, the criticisms of the approach that have been raised over the past 3 years of its development are that:

- There is not enough attention paid to the various ways in which research activities can be organized or to the role of national and international politics in the research process. Some terms (such as "leadership") are too vaguely defined and some concepts (the entrepreneurial skills required by researchers), are too narrowly considered. The categorization of the research process, as adapted from Vielle, suffers from lack of clarity and mutual exclusivity.
- It is ethnocentric in nature. The exercise, in purpose and implementation, reflects assumptions about how research is done and what conditions are necessary for the development of research capacity in the developed world, in other words, a mature research environment. The point has been justly made that

research done under conditions of scarcity might well require (and benefit from) quite different designs, different ways of gathering and organizing data, different kinds of analysis and interpretation, different kinds of training (on-the-job, for example, rather than graduate degrees), and different kinds of skills.

• In terms of the theoretical issues of the framework's structural and reductionist nature, it necessarily becomes oversimplified and its categories too static and too reduced to capture the complexity and richness of any one environment; the forest is lost in the trees. It is primarily an attempt to produce a snapshot of elements either present or absent in a given setting at a given time — a snapshot that appears immobile, flat, and in black and white. One might argue that the same framework, more imaginatively used, could become more three-dimensional and colourful, and that if several such snapshots representing different periods of time were seen together, a sense of history and development might also be created. But admittedly this is not enough. Snapshots seen one after another do not make a movie, and in this sense the approach does not really capture the complex dynamics of the development of an environment for research: the interaction with traditional culture and colonial rule; the relationships among personalities, institutions, and ideologies; and the interplay of competitive interests, both indigenous and foreign. Only more detailed description that goes beyond this mechanistic framework can make dynamics such as these real and comprehensible.

Unique Settings for Educational Research

The appropriateness or validity of this particular model of analysis, however, is of less importance than the agreement that some kind of analysis can and should be done. What such analysis will surely demonstrate is the overriding sense of variety and uniqueness of education research environments in the developing world. The only thing they really have in common is that they are not like environments of the North — however much some of them may aspire to be. Their traditions and contexts are quite different as are the particular mixes of available skills, the characteristics of research institutions, the styles of research management, and the nature of their climates for research. These differences do not lead easily to generalization about research environments across the developing world or even across countries that share similar geographical or historical features or similar styles and levels of development.

Thailand, for example, has a surfeit of educationists — researchers trained in curriculum, psychology, and administration usually with a quantitative orientation — but few social scientists interested in the field. Colombia has few researchers trained in educational areas but rather a predominance of sociologists and economists attracted to education because of its apparently pivotal role in issues of social stratification and equity.

The university is (or was) the fulcrum of research in Kenya and Uganda but plays only a supporting role to government centres in Thailand. Although research is a valued activity in Kenyan government circles, it is all but ignored in Mali, and although the small, intimate nature of the Jamaican education community often has led to research being turned into practice (albeit only after considerable delays), in Jordan, "small" means completely ignored as researchers do their work quite apart from any Ministry interest or support.

The list of differences among research environments could go on and on. Each one is unique, and such uniqueness should tell us something about the complex nature of what we are calling a "research environment" and the even more complex process of intervening within it.

Commonalities Among Research Environments

But in spite of the uniqueness of each environment studied and the various ways in which each author approached the task, several common features stand out. The first is that research is not a neutral activity. As stated earlier "research is very much a cultural phenomenon tied to subtle but significant factors such as ideology and worldview, communication patterns, and decision-making styles. More obviously, research is also a social and political process. The funds it consumes and the knowledge it generates represent power, and it can be used (some might say abused) to promote dialogue and induce a particular climate of thought and action, to rationalize policies and legitimate decisions, and, as propaganda, to gain personal influence and win political battles., Research, therefore, is seldom the neutral and benign process so often claimed by the scientific community or assumed by donor agencies." Instead, research fulfills a host of individual, institutional, national, and even international purposes.

Related to this is the critical role played by donors and the international community in general in the technical assistance process. Donors (their money and their officers) affect the mix of research skills, the strength and nature of research institutions and the bonds between them, the process of research (topics chosen, methods used, and even conclusions reached), and the research climate itself. They choose certain institutions for grants and don't choose others. They predetermine areas of interest and favour some methodologies over others. As representatives of larger economic and political entities, they generally support compatible researchers and themes rather than scholars who represent alternative perspectives and ideologies.

Such apparent whimsy is especially disturbing in a process of institution building that is inherently so fraught with uncertainty. Many research climates are fragile, and many institutions are delicately balanced between survival and collapse. Leadership and staffing are often unstable, and local support is tied to erratic local politics or personalities. To add to this tenuous situation the changeable directiveness of external agencies that often provide (at best) a series of short-term grants contingent upon satisfaction of frequently altered criteria, can lead only to more uncertainty and instability.

What is needed, then, is both short-term flexibility and long-term commitment: the willingness on the part of donor agencies and national governments to respond to capacity-enhancing efforts with imagination and variety, but to do so with the understanding that some kind of assistance will continue — especially in providing the training, facilities, and expertise needed to build a firm basis of future research.

Summary

The effective generation, conduct, evaluation, and use of different kinds of research within a given society is dependent upon the presence of an appropriate combination of individual skills and structural relationships embedded within a tolerant, supportive climate. Shaping and increasing the quality of this combination and, to a lesser extent, improving this climate — in other words, enhancing a society's capacity for educational research — are amenable to strategies by external and internal agencies alike.

The development of such strategies within any country, however, is a complicated and difficult task. It requires a thorough understanding of the country itself — its history and culture, its political and economic systems —

and of the individual, structural, and climatic components of its research environment. It also requires some difficult choices: what kinds of research are most needed; where, within the structural geography of the nation, should such research be done; and what specific components of the environment must be altered to achieve these goals? Above all, it requires changed attitudes by donors and recipients alike. Developing nations must be willing to undertake a frank self-analysis of weaknesses and strengths and then make the hard choices necessary to set priorities for future development; donor agencies must be more sensitive to such internal assessments and then be able to act as peers rather than patrons in offering analyses and proposing choices from their own quite different perspectives. Even more important, donor agencies must spend more time, use more labour, and demonstrate more imagination and flexibility than they have in the past in the planning and developing of projects to enhance capacity for educational research — and then continue through with support over a lengthy period of time. Quick, standardized, and simplistic solutions to this complex issue do not work.

The country case studies that follow describe different environments for research and allude to different ways to enhance research capacity. The most important lesson is the need to approach the problem's many dimensions from many directions. One approach is increased flexibility in training — from merely increasing the number of available researchers to enriching the mix of their skills. This requires a move away from heavy reliance on exclusively foreign degree training in purely educational fields to combinations of various approaches, locales, fields, and participants.

Too often, because of individual, institutional, or donor-agency constraints, attempts to upgrade research competence are limited to a few popular skills, a certain length of time, and a standard depth of treatment. Sometimes such limits are necessary; a researcher needs to know a new technique, budgets permit study for only 6 months, and the different backgrounds of the cohort being trained force a basic, rather than an advanced level of instruction. To fine-tune the individual skill component of research capacity, however, requires much greater flexibility. For example, training can become more individualized, responding to each person's needs differently; it can cover a combination of experiences given in a variety of locales; and it can provide a mixture of skills, some given intensively to produce disciplined expertise, and some more briefly to produce literate understanding.

Too often, skill training is inflexibly limited to active and highly visible researchers; policymakers (it is said) are too busy or too disinterested for further training, and provincial-level planners (for example) are considered of too little consequence to become part of training programs. A balanced capacity for research, however, requires that such people, too, be trained, most appropriately in programs with particular flexibility of timing and treatment.

If the training in specific skills is to become more flexible and the population of trainees more inclusive, then participatory research and learning-by-doing techniques appear to be appropriate training methods. Several kinds of people can be simultaneously involved in such processes — researchers as well as decision-makers, leaders as well as data gatherers. Several kinds of skills can be systematically taught from the beginning to the end of the process, and the level of training, to some extent, can be adjusted to each individual participant.

Greater flexibility can also be shown in interventions to strengthen the bond of institutional/structural relationships. Demands for a greater variety

of skills within research institutions and for more open networks of communication and channels of diffusion among such institutions are nothing new. It is generally admitted that the integration of diverse backgrounds cross-fertilizes the research process, and that exchange of information and the diffusion of results both lead to more systematic research and prevent duplication (although the point has been made that repeating research previously done elsewhere may often have beneficial results). What should be stressed more, however, is the inclusion within these arrangements of ordinarily excluded participants. Networks and channels, in other words, can too often be unidirectional, from the top down or from the leading institution out to its followers. But other directions and patterns may also prove effective. Subnational planners and researchers can usefully inform the research process at the national level; managers of religious and/or private school systems have valuable experiences to share with government educators; and, most important, social scientists can provide perspectives often missing in purely educational institutions or networks. The inclusion of such people in new structural relationships will strengthen the critical bond, enrich the research community, and make resulting research more insightful and effective.

Finally, greater flexibility and imagination are most needed in attempts to improve the climate for research, for here we face the difficult, and sometimes ethically problematic, task of tampering with tradition, culture, politics, and popular belief. Two kinds of activities should be stressed. First, as potential consumers and supporters of research, policymakers should be more regularly brought into the research process and exposed as often as possible to its generation and its conduct (as participants in planning and implementation), its evaluation (as monitors of its progress and discussants of its conclusions), and its uses. Research results, for example, can be written to present alternatives to, as well as draw conclusions for, policymakers, thus making research appear more relevant to educational policy and more important to future educational decision-making.

Second, on the assumption that the "garden" of research will prosper if "a hundred flowers" bloom, more kinds of people (teachers, students, policymakers, and professional researchers) should be encouraged to use more kinds of skills and techniques (quantitative and qualitative, from education and from the social sciences) at more levels of the society (nation, province, district, and individual school) in more kinds of research projects. This implies the need for more funds, for greater flexibility in research funding, and for the introduction of concepts of research into general training programs. The danger of producing too much inferior research is obvious in such a course of action, but this general and wide-scale encouragement of the research process might well increase the research mindedness of the society as a whole and, thus, in the long run, be instrumental in improving its climate and enhancing its capacity for educational research.

Strengthening Education Research Capacity: The Colombian Case, 1960–81

In this case study, Chiappe and Myers argue that although scholarly tradition is well established in Colombia, the forms of inquiry that are most widely accepted still approximate more closely "philosophy" than "science" as it is often described today (i.e., in North America). Until recently, the approach has been largely historical and "essayist." This heritage, they argue, does not facilitate the application of scientific reasoning to the examination of social problems.

In the social sciences, the authors observe two parallel research strands: what they call a reflective, critical strand, building on an essayist tradition and incorporating Marxist analysis, and another strand that is heavily empirical, positivistic, survey-oriented, and with strong ties to work done in the U.S. in the 1960s and 1970s. They list the topics of research conducted in the period 1979–81 and examine some of the major institutions at which this work was carried out.

The authors show that a significant portion of the research on education in Colombia has been done by social scientists applying their methods to education. This "crossing over," as they call it, seems to have enriched the field of education and probably contributed to its prestige. But they argue that it also means that there is a lack of first-rate researchers within education itself. Research skills, for example, are in painfully short supply within schools of education, and research on education from anthropological, psychological, and political perspectives is almost lacking. There is also a shortage of individuals trained for the administration of research and possessing the ability to organize and coordinate the research process.

With many of the elements of a national research capacity present at a relatively sophisticated level (research institutions, a good data base, and some regular publications), the authors point out that a major question now facing Colombia seems to be how to organize and coordinate research activity so that it can have a cumulative impact on educational policy and quality. Among some of the problems that militate against this desired goal are harassment of leftist scholars and the absence of a "public opinion" that might come to their aid. The authors imply that this support is missing because most researchers do not merge theory and practice. Rather, they argue, such researchers are from elitist backgrounds and seem to accept for their own children the established social arrangements (in education and other areas) while criticizing these same societal arrangements in their research.

The general purpose of this study is to understand better the growth and consolidation of a national capacity to carry out research on education in Colombia. We will begin with descriptions of the historical and social context

Clemencia Chiappe and Robert Myers Programa de Formación a Distancia, Servicio Nacional de Aprendizaje (SENA), Calle 54 Numero 10-39, Piso 7, Bogota, Colombia, and Ford Foundation, 320 East 43rd Street, New York, N.Y. 10017, USA

for research in Colombia, the present research climate, the structural geography and the skills and competencies of researchers, the organization of research, and the themes and the methodological approaches used. We will then examine in more detail four research strategies followed during the triennium of 1979–81. The four strategies differ in terms of their organizational arrangements, leadership, funding patterns, thematic and methodological emphases, and relationships to policy. Finally, we will offer conclusions in the form of hypotheses and questions about alternative strategies and methods that might be adopted to strengthen educational research capacity, based on the Colombian example.

We view the research process as a social process encompassing all phases of research activity from the birth of an idea to the use of research. Each major phase — conception, design, conduct, dissemination, and use — is influenced by the social identity of, and the relationships among, people carrying out and using research. Furthermore, the processes and outcomes of research are conditioned by the way in which research is organized and by the larger social and political circumstances within which it is embedded. We take the research process (and the development of research capacities) to be nonlinear. We will speak of research capacities rather than a research capacity, and will distinguish among types of research. We have drawn directly upon material from the Education Research Review and Advisory Group (RRAG) in stating this position (see Shaeffer 1979).

Our information is drawn from previous studies, a small seminar, and a review of research completed or begun between 1979 and 1981. The previous works upon which we have drawn most heavily are: Toro and Lombana (1978) "El Fenómeno de la Investigación en Educación en Colombia (1960–1978)," which analyzes characteristics of 238 works of educational research carried out over the 18-year period from 1960–78; COLCIENCIAS (1978) "La Investigación en la Universidad Colombiana," which compares university-based research in 1972 and 1978; Chiappe (1979) "Anotaciones sobre la Situación de las Ciencias Sociales en Colombia," which describes and analyzes the main thematic, disciplinary, and institutional tendencies in Colombian social science in the 1970s; and Toro et al. (1979) "Educational Research Capacity: the Colombian Case," which is a forerunner of this paper that describes the Colombian educational research scene in 1979.

Our own review of educational research was based on conversations with researchers; visits to institutions, funders, and the Ministry of Education (MOE); and an examination of periodicals. We identified 102 research works or projects completed or begun during the 1979–81 period. These were classified by institution, discipline and educational level of the researcher(s), source of funding, and the type of dissemination of research results. The review complements that done for the 1960–78 period by Toro and Lombana (1978). Finally, we obtained more detailed information about two institutions, the National Pedagogical University and the Planning Office in the MOE, and two research networks, Fondo Colombiano de Investigaciones Científicos y Proyectos Especiales (COLCIENCIAS) and the Interinstitutional Committee for Educational Research. The purpose of these case studies was to determine the impact of their respective strategies on the climate, skills, themes, and institutionalization of educational research.

Colombia, a country of 27 million people, shares a Spanish colonial legacy with other Latin American nations and more than a century and a half of political independence. That legacy is evident in the stratified, hierarchical social structure of Colombia dominated by Spanish speakers of European

heritage. It is evident in the prominent and enduring influence of the Roman Catholic Church. It is also evident in an "essayist" intellectual tradition. It places Colombia squarely within the Western world. Over time, and certainly within the last 50 years, that Western view has been influenced more and more by the U.S. Colombia does most of its trading with the U.S. Many of the present Colombian elite received their education there and many Colombians have migrated permanently to the U.S. A large share of Colombian technology originates in the U.S. Within the Western tradition, private enterprise has flourished, and the state has not been a major actor in the business world.

The people of Colombia are far from homogeneous. Over the last 4 centuries, most of the Indian population, which was originally large, has been incorporated into the dominant Spanish culture, creating a large mestizo group. Still, many indigenous groups remain on Colombia's geographic and social margins. Most important, about 30% of Colombia's population is black (or mulatto), concentrated along the coasts and in valleys where sugarcane is grown.

The rugged and diverse geography of Colombia has fostered strong regionalism. Three branches of the towering Andes mountains cut through the country. Colombia boasts tropical coastlines on both the Atlantic and Pacific oceans. Vast tracts of interior flat land are drained by the Amazon and Orinoco rivers. In the geographically fractured country, 20 major cities have grown up and local loyalties have dominated. Only in the last 2 decades does power seem to have shifted toward the capital city, Bogota. During that time, communications have improved, and Bogota has grown fivefold to a city with a population of about 5 million. Migration has helped swell other cities as well, changing Colombia from a predominantly rural to a predominantly urban country.

Ethnic, social, geographic, and rural/urban differences are reflected in huge educational and economic disparities. The black population along Colombia's Pacific coast, for instance, almost totally cut off from the rest of the country, is extremely poor, uneducated, generally malnourished, and beset by malaria. At the centre in Bogota's expensive and elegant suburbs, a healthy population, educated in elite private schools, lives in spacious comfort. Contrasts have increased despite economic growth at an average of almost 6% per year in gross domestic product (GDP) during the 1960s and 1970s. The per-person income for all of Colombia was more than U.S.$900 in 1980. Nor has massive educational expansion reduced the contrasts.

A federal system of government, modeled on that of the U.S., attempts to cope with regionalism and diversity but is overlaid with deeply rooted clientelism. Politics (and other institutions) build on strong personal loyalties. A period of widespread violence in Colombia following World War II, and feeding upon political, regional, and social differences, forced a political modification in 1958. The two leading parties declared a "United Front." They agreed to alternate periods of control and to balance government appointments. "Politics of compromise" among members of an established and expanding elite, together with a reasonably dynamic economy, helped the country maintain a relatively open political environment during the 1960s and 1970s. (For a recent treatment of the theme and description of modern Colombia, see Berry et al. 1980.)

In Colombia, as in most Latin American countries, education is highly valued — at least in urban areas. It is perceived by the majority (for most, incorrectly) as a major channel for social and economic mobility. It is perceived by governments as a source of needed labour. About 5% of the GDP is spent for public and private education. Recently, the percentage of the national budget

allocated to education has hovered around 20%, according to statistics obtained from the MOE, and, by law, the combined spending for health and education is supposed to account for between 15 and 25% of the budget.

In the past 20 years, primary school enrollment has increased annually at an average rate of more than 5%. Most Colombian children (more than 80%) now have access to primary schools at the entry age of seven (as compared with only about 60% in 1960). In rural areas, however, access lags: only two-thirds of the eligible population are enrolled. Moreover, repetition averages about 15% country wide. The rate of primary school completion remains low, particularly in rural areas where only 40% of the schools contain all five grades. Thus, increasing access in rural areas and improving the internal efficiency and quality throughout the system are key tasks.

The enrollment ratio at the secondary level is now about 40% and at the tertiary, about 8%. Both levels have expanded rapidly in the last 15–20 years — to the point where, as in so many other places, educational qualifications are outrunning available jobs. Secondary and tertiary education are concentrated in urban centres. At both levels, more than half of the students enrolled are in private schools. Among the private schools, many of which are church related, are found not only the most expensive schools, but those reputed to be the best, attended by children from the middle and upper classes. The dual public/private system, which reinforces social differences even while occasionally assisting mobility, is firmly entrenched.

Within the Colombian educational system, emphasis has been placed, at all levels, upon imparting knowledge (as contrasted with aiding the discovery of knowledge). At lower levels of the educational system that propensity translates into a curriculum stressing memorization. At university levels a

Ethnic, social, geographic, and rural/urban differences are reflected in educational and economic disparities. Nations differ as to whether researchers are allowed to pursue such potentially explosive issues.

parallel phenomenon is present in the continued dependence on "notes" published by professors, in the predominance of the lecture method, and in the relatively minor involvement by professors themselves in research. The teacher, particularly up to the 1960s, has been viewed more as a coach than as a scientist or specialist and has been more concerned with helping form personality, transmitting moral values, and imparting facts than with promoting independent inquiry.

In Colombia, out-of-school educational opportunities are widely available. Radio schools of the church-related Acción Cultural Popular (ACPO) reach deeply into the rural areas. ACPO's success over a period of 40 years may help account for the fact that, despite the low level of primary school completion, literacy in Colombia is relatively high, more than 80%. A widespread training and apprenticeship program, Servicio Nacional Alphabetización (SENA), reaches several hundred thousand Colombians each year, and is financed by a 2% payroll tax. In major cities, entrepreneurial educational establishments have proliferated — for completing a secondary degree, for learning English, or for acquiring a technical or managerial certificate.

Research Environment and Climate

Inquiry has long been valued in Colombia, particularly in academic circles. That tradition has, however, been largely historical and essayist until recently. Although scholarly in the extreme and often systematic, the forms of inquiry that are most widely accepted in Colombia still approximate more closely philosophy than "science" as it is often defined today. This heritage does not facilitate the application of scientific reasoning to the examination of social problems. Inroads on the dominant research tradition have been made with the increasing "technification" of government bureaucracy, with the return of students abroad, especially from the U.S., and with nudges from international funders of research. These changes have also helped increase the demand for empirical research.

As will be discussed later, a significant portion of the research on education in Colombia has been carried out by social scientists applying their methods and theoretical perspectives to education. In Colombia, within the social sciences, there are two general strands of research running in parallel. (For a much fuller treatment of the social sciences in Colombia, see Chiappe (1979).) A reflective, critical strand, building on an essayist tradition, has become increasingly associated with conflict analysis, increasingly empirical, and increasingly related to debates grounded in the work of Marx, Gramschi, or the Frankfurt school. European scholars are important interlocutors. This strand is evident, for instance, in research on the origins and development of capitalist modes of production, or in the examination of education as an agent of underdevelopment. The other strand is heavily empirical, positivistic, survey oriented, and has strong ties to work done in the U.S. in the 1960s and 1970s. That tradition is illustrated by household survey work done on Colombian unemployment or relating education to employment.

The more reflective research strand is based more often than not in public universities where individual researchers enjoy the modest institutional support their salaries provide, attracting outside funding occasionally but mostly working on their own. It is noteworthy that this strand has survived the ever-present problems of institutional instability and has not depended on high levels of

financial support. The survey strand tends to be located in private universities and research centres and is funded, often by international agencies, through institutional research projects. These trends in the social sciences are mirrored in educational research.

Colombian researchers in the social sciences and education can publish critical as well as technical work. The government monitors work done from the political left, and researchers practice some self-censorship. The potential impact of independent research, critical in tone, is further blunted by the absence of what one might label "public opinion," and by the prominence of political concerns in decision-making. It also suffers a certain lack of credibility because researchers, who are predominantly from elite backgrounds, seem to accept in practice for their own children the established arrangements, educational and other, that they criticize in their research. The Colombian scientific community is not known for open criticism among colleagues. It, too, tends to live by a compromise norm.

Although a tradition of inquiry exists, demand for technical research has increased, and a relatively open environment exists, researchers in Colombia must contend with a series of difficulties to carry out research. The strong oral tradition, for instance, provides little incentive to publish. Institutional instability hampers continuous research efforts. A study by COLCIENCIAS (1978) produced the following list of obstacles limiting research in Colombia universities:

- Financial obstacles: (a) Universities do not give as important a place in their budgets to research as is required and (b) salary incentives are lacking for professors to carry out research.
- Institutional obstacles: (a) Teaching is favoured over research, (b) the number of teacher–researchers is small, (c) postgraduate programs do not focus on research, (d) the university lacks mechanisms for promoting and coordinating research, (e) laboratory facilities are insufficient, (f) bibliographic sources and documentation are weak, and (g) opportunities to attend scientific meetings are few.
- Sociocultural obstacles: (a) The value of research is not properly recognized and (b) links to the community at large are deficient.

These affirmations are all the more relevant because they are made by the organization officially charged with bettering science in Colombia. They suggest that research does not yet seem to have become an integral and valued part of the process of social reproduction in Colombia. What has been said in general is even more pertinent within education faculties and teacher training colleges.

Structural Geography of Educational Research

A centralized, government-guided approach to educational research was greatly encouraged in 1968, with the creation of the Instituto Colombiano para el Fomento de la Educación Superior (ICFES), COLCIENCIAS, and the Instituto Colombiano de Pedagogía (ICOLPE). ICOLPE's mandate included responsibility for basic research, designing curricular models, preparing teacher training programs, and gathering information for the MOE. This diverse mandate and the well-intentioned desire to marry research and practice brought along bureaucratic red tape, political demands, focus on immediate problems, and leadership turnovers, undercutting ICOLPE's research mission and leading to its early demise in 1976.

The centralized institutional initiatives described came 1 year after the establishment of the first Colombian postgraduate program in education at the University of Antioquia. They were accompanied also by sweeping educational reforms. In support of these reforms, groups of Colombian educators were sent abroad for advanced study. With this coming together of events in 1968, the volume and sophistication of educational research grew. The result is evident in Table 1. There is no doubt that government initiatives contributed directly and significantly to this growth, despite the failure of ICOLPE.

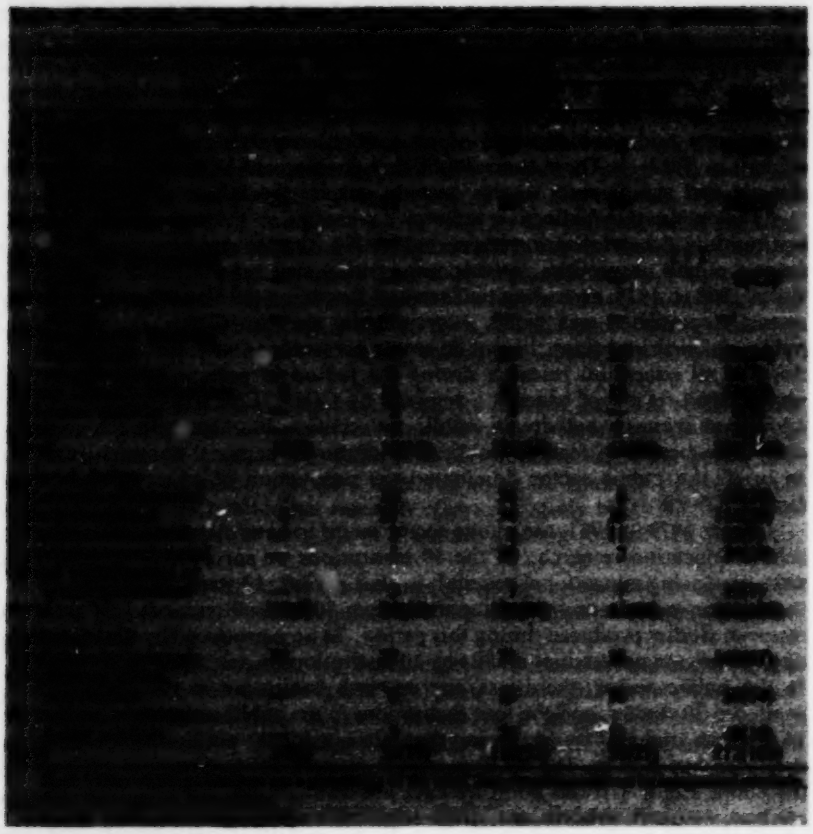
Following the ineffective attempt to centralize research, a process of institutional decentralization reasserted itself within government agencies and among public universities, private universities, and private research centres. From 1960 to 1978, according to Toro and Lombana (1978), about 43% of the research completed was within governmental agencies (Table 1). Adding in public universities brings the public-sector percentage to 67, leaving only one-third of all education research during the period in private institutions. An unpublished review of education research by COLCIENCIAS staff turned up additional research activity in public universities, but that research seemed only infrequently to lead to publication (Pantoja, personal communication). In brief, the public sector dominated the production of education research from 1960–78.

From 1979 to 1981, the public sector seems to have played a less dominant role in education research. Of the 19 institutions we surveyed in Bogota that were producing educational research in that period, 13 were located clearly in the private sector, accounting for more than 50% of all research.[1] Of the 102 research studies produced during this period, 32 were produced by three institutions in private universities and 24 by 10 institutions in private research centres. In the public sector, there was one research institution in the MOE and it produced 30 studies, and the four institutions in the public universities produced 14 research studies. One institution that falls outside the public or private sector produced two studies. The MOE continues numerically to dominate research in the public sector. (At this point we have not distinguished research by purpose, method, or quality. More analytical, sophisticated research is seldom located in the Ministry.)

Most Colombian educational research has been carried out in Bogota. Important exceptions exist, particularly in Medellin and Cali, concentrated in the universities or in private institutions. (In Medellin, for instance, the public University of Antioquia and the private institutions, such as the Asociación Nacional de Institutiones Financieras (ANIF), have produced research. In Cali, one finds a host of research at the private University of the Valley and private centres such as the Human Ecology Research Foundation, the Foundation for Higher Education, and Vivamos Mejor.) As is evident from Table 1, regional, departmental, and municipal levels of government do not participate in research. Whether or not the trend is toward or away from greater concentration in Bogota is not clear from our data.

Institutional differentiation normally accompanies differentiation in functions, work tasks and methods, and vice versa. Basic information-collecting tasks, some evaluation, and diagnostic studies related to planning are found in

[1]Because our survey was limited to Bogota, it is not directly comparable with that of Toro and Lombana (1978). If we added institutions outside Bogota, and if we applied a stricter definition of research, the percentages would change, but not drastically.



the public sector. Such "basic" research as there is tends to be found in the private sector or in universities.

Research Skills and Capabilities

Colombia can boast of considerable education research talent, some certified, some uncertified, but extremely competent. An informal survey produced a list of 45 individuals in Colombia at the "all-but-dissertation," PhD, or MA level, who were involved in or had been specifically trained for education research.[2] At least six other Colombian PhDs in education are now working abroad.

Many education researchers have received their training in fields other than education. Many have carried out research on education, but not from within education. The informal list of 45, for instance, includes sociologists,

[2]We do not wish to equate such certification with competence. Nor will we enter into a discussion of what constitutes research skill. However, simple possession or even use of sophisticated methodological and statistical skills acquired while completing a PhD does not assure proper application.

economists, historians, medical doctors, a communications specialist, and an urban planner. A similar diversity is evident in the disciplinary origins of those who completed the research reviewed by Toro and Lombana (1978) for the 1960–78 period: only 40% were trained in education. In our survey of research, 1979–81, we could determine the disciplinary background of 65 principal researchers, 30 of whom were not trained in the field of education (Table 2).

This "crossing over" seems to have enriched the field of education and has probably contributed to a rise in its prestige. It also means that there is a lack of first-rate researchers within education itself. Research skills are, for instance, in painfully short supply within schools of education. (The exception is the National Pedagogical University, which will be discussed later.) Crossing over has occurred frequently from sociology and economics. However, research on education from anthropological, psychological, and political viewpoints is in short supply.

Among education researchers in Colombia, there seems to be a scarcity of entrepreneurial skills, which include the ability to "sell" research (Shaeffer 1979, p. 18). In addition, there is an evident lack of individuals trained for the administration of research and possessing the ability to organize and coordinate the research process. These skills do not necessarily accompany solid theoretical or methodological training. In fact, it would be fair to say that little recognition has been given to the importance of research coordinators and managers or to the related need for a supportive infrastructure requiring orderly administration. We will return to this later in the discussion on institutionalization.

Research Topics and Methods

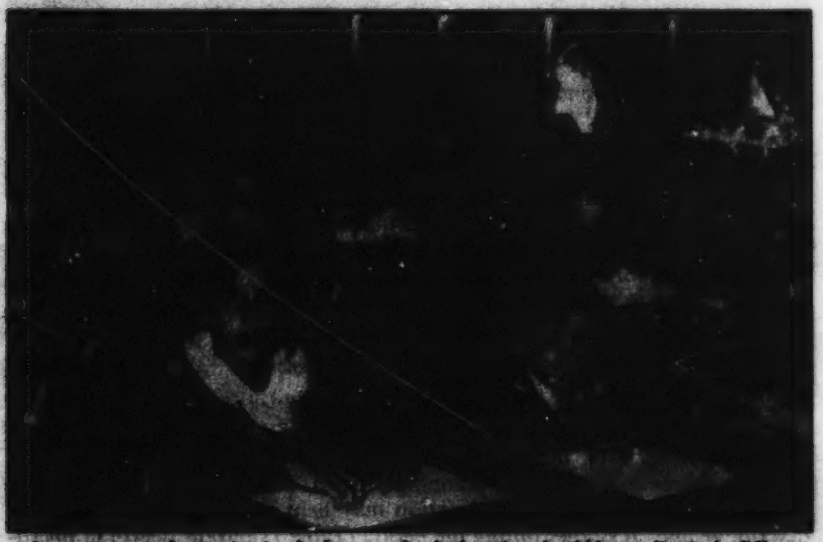
Demand and the personal interests and capabilities of researchers influence choices of research topics and methods. The general demand for research from the public sector grew during the 1960s, driven by a need for information to serve the increasingly technical planning process. The growth of planning and an expansionist mood within education may help explain the dominance of descriptive, global studies during the period (Table 1) and the dearth of micro-level studies looking at problems within classrooms or related directly to the teaching/learning process. It may help explain also the importance placed on research by economists or sociologists. Moreover, economists and sociologists

were available and interested. These social science disciplines were already well established academically, had a record of impact on policy, and had attracted students of development anxious to influence Colombia's future (Instituto SER de Investigación 1980).

Neither anthropological nor psychological approaches had been prominent in research on educational processes in the 1960s and 1970s (Reichel-Dolmatoff and Reichel-Dolmatoff 1973). Nor had historians or political scientists turned their attention to education, with a few notable exceptions (Uribe 1970a; de Alba 1980).

The quantitative and descriptive demands of the time fit well also with academic training and interests of researchers. Before 1980, social science researchers from both the reflective and technical traditions preferred to carry out sweeping, macrolevel studies on a country-wide basis or cover extremely long periods of time or both. By 1980, however, more specific, regional, or time-bounded studies had begun to appear, a shift perhaps best explained by the feeling that macrolevel descriptive and diagnostic needs were by then being met, at least for the most basic variables. (The following works illustrate the shift: Uribe 1964, 1970b; Parra 1971, 1978; Kugler and Vivas 1975; Kugler and Reyes 1979.) The shift may also have represented a reaction aginst large, often superficial, surveys related to an imported methodology.

With the Colombian educational system approaching an acceptable level of literacy and primary school attendance in the late 1970s, attention began to turn slowly toward quality and an examination of the education process. A survey in 1978 of researchers, policymakers, and practitioners in education (Parra and Pantoja 1978), for instance, identified the need for studies of classrooms and curricula, for research on teachers, and for an examination of the preparation of children entering primary school. (In 1978, a group of researchers



A frequent research question is whether preschool education should be qualitatively different from that of the formal primary school. What proof exists that preschools give children a head start in first grade?

with interests in preschool education met, providing extra stimulus to work in that field.) These themes began to find their way into research. So did attention to less-advantaged groups and to education in rural areas. These slow shifts accompanied the aforementioned broadening of education research to include ethnographic, microlevel analyses.

Statistical methods used in education research have grown increasingly sophisticated. The Toro and Lombana (1978) review of research, 1960–78, illustrates the progression (Table 1). The return of researchers trained abroad began to affect both the sophistication of design and the statistical treatment significantly in the 1970s. The trend continues.[3]

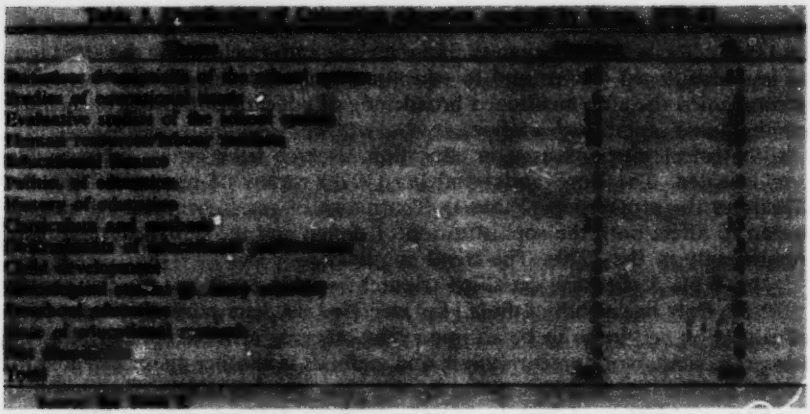
In Table 3, we have classified research roughly by theme for the period 1979–81. Only one-eighth of the studies identified are descriptive. The economics of education continues to be an important category of research. Sociology is less prominent. Work on curriculum and methods is another major category of research. The list includes research that has psychological, ethnographic, political, and historical foci. In its entirety, it illustrates trends we have been pointing out: (a) toward greater concern for the quality and content of education; (b) away from purely descriptive work and toward more sophisticated analyses, conceptually and statistically; (c) away from sweeping macrolevel studies and toward pointed, sometimes microlevel research; and (d) toward a broader spectrum of methodologies including anthropology, psychology, and political science.

Finally, a research typology developed by Jean-Pierre Vielle (1980) can be applied to differentiate research according to its main purpose:

- Disciplinary research: Projects that analyze and evaluate educational phenomena and the interaction of the variables that constitute them, or the relationship between education and society. This is a type of research designed to create new knowledge.
- Research for planning: Projects that diagnose, prognose, and evaluate educational systems; projects that design educational programs. Their results serve as a basis for educational policy, for decision-making within the framework of an already designed educational policy and for the implementation of new action.
- Instrumental research: Projects whose immediate aim is the introduction of modification into educational contents, proceedings, technologies, methods and systems. This type of research serves as immediate support for innovations.
- Action research: Projects that directly assume the realization of an educational process in a new fashion, often as an experiment. They are often an experience shared between the researchers and the groups toward which their action is directed.

Vielle distinguishes disciplinary research, the primary purpose of which is knowledge generation, from research directed principally toward planning, instrumentation, or action. In the late 60s and early 70s, educational research activity in Colombia was often identified with a process of data gathering for the purpose of elaborating political projects and programs, fulfilling a "fire

[3]Economist Bernardo Kugler lists in his article "Una revisión critica de las investigaciones hechas en Colombia sobre educación y economia," 45 studies, out of which the oldest is dated in 1964. Out of these studies, at least 15 show a high degree of quantitative sophistication. The papers submitted by Kugler at the Seminar on the State of the Art of Research on Education held in 1980 can be found in "Revista Colombiana de Educación" No. 5, 1980. (We do not suggest that "more sophisticated" is necessarily better.)



department" role. During that period, disciplinary or basic research continued in the universities, usually carried out by individuals working on their own time and with little or no funding. In 1979, university-based researchers were focusing their efforts on basic research, leaving policy-directed research largely to the government and, occasionally, to private research institutions. Action research, designed to change directly behaviour of those involved in the research, was just beginning to take hold, usually from a base in a private institution. In brief, differentiation of research efforts was occurring embracing a spectrum of research purposes, types, and institutions.

Research Institutions

Perhaps as many as 25 institutions in Colombia are involved in a serious and sustained way in the production of educational research. In our survey, we identified 19 institutions in Bogota, most of which fall in that category, located within the government, in public and private universities, and in the private sector. Many other institutions dabble occasionally in educational research or serve as a base for individual researchers.

As research has grown and decentralized, different institutions have taken on different research functions. To help understand better that process of growth, consolidation, and differentiation of education research, we will look at the organization of two institutions that were very active on the Colombian research scene between 1979 and 1981: the Centro de Investigación de la Universidad Pedagogica (CIUP) and the Office of Planning of the MOE.

CIUP was created in 1976 as an educational research centre attached to the National Pedagogical University. Financial support comes mainly from the University, which means that indirectly most funding is provided by the government. Several research projects also have financial support from national and international foundations. Originally, most of its researchers came from ICOLPE when it was closed down in 1976.

The CIUP seeks an impact, through research, on both the academic world (schools of education at the different universities and educational research in general) and the world of educational policy (by designing, experimenting with and/or evaluating innovative models that have to do with educational problems).

The CIUP has sought both theoretical and administrative articulation to

provide integration, quality, and continuity in its research and its organization. Articulation at a theoretical level, of different methodologies and different disciplines, occurs in application to a single problem defined as a research priority. CIUP researchers agree on a topic providing focus for teams of researchers with different viewpoints. Early in the research process the approach is unidisciplinary, that is, the problem is treated from the viewpoint of the researcher's own discipline and specialty. At a later stage, the combined work within each team produces a multiple approach — that comes from several disciplines — centred on a single problem.

The multidisciplinary approach described should not be confused with that of interdisciplinary studies, because the aim here is to preserve the different research methodologies that are particular to each discipline. The approach allows historical, ethnographic, and quantitative research to be focused on one topic. It has led to increased sophistication in the methodological treatment of the subject matter. It has helped also to attract excellent researchers from other institutions to work in CIUP.

Theoretical articulation requires administrative coordination of projects to ensure their efficiency and impact. Coordination is also necessary both to produce continuity within CIUP and to maintain the researcher's continuity in his or her topic. At the same time, active coordination of research teams at the institutional level allows research results to be published in a unified fashion.

From 1979 to 1981, CIUP zeroed in on problems related to the primary school, attention to preschool children, and science training. Historical studies have dealt with the history of pedagogical practices in primary school and with the history of educational policy. Ethnographic research has been conducted on three themes: the primary school teacher, teacher training institutions, and pedagogical practices that are effectively used in the classrooms in rural areas.

The institutionalization of educational research in CIUP has had several effects on Colombian educational research. First, it has helped improve the prestige of educational research. CIUP researchers have presented educational topics at seminars in history, methodology, and epistemology. These presentations have linked education more closely to other parts of the academic world, i.e., to the body of researchers who relate to one another fundamentally via a discussion of their own work.

CIUP's work has also had a bearing on educational research topics and methodological approaches. It has, for instance, encouraged anthropological and historical studies, which we have noted were seldom applied to education in the 60s and early 70s. CIUP's choice of topics has helped fill research gaps. These choices resulted from weighing results from analyses of: (a) research needs, (b) the functions assigned to a research centre that was attached to the University, (c) CIUP's functions as part of the governmental sector, and (d) the human resources in CIUP — in terms of their mastery of certain areas of knowledge.

CIUP's method of organizing itself around topics for research and methodological approaches leading to joint and continued actions has begun to attract the attention of other research institutions in universities, governmental agencies, and private research institutes. As the research centre has gained recognition, it has been able, slowly, to recuperate for the National Pedagogical University the task of designing experiences and models (curricular, administrative, etc.) as a sound academic exercise that could, nevertheless, be of use in the governmental sector.

CIUP devotes special attention to the publication of its journal, "Revista Colombiana de Educación," which is directed to educational researchers both within and outside of the university and to the students in the social sciences in general. The journal, together with "Documentación Educativa," which is published by the library at the National Pedagogical University, constitutes the most significant contribution on the part of the University to the process of dissemination of research-based information.

Up until now, CIUP's research work has had little bearing on graduate studies programs at the University. It has, therefore, done little to help produce a new generation of researchers or even to instill research skills in students. The quality of the training given students depends on the quality of the professors, which, in turn, is a function of their pedagogical abilities and, most important, the degree of their involvement in research work and their relationship to other colleagues in this type of work. This lack of involvement in research work is largely responsible for the questionable quality of graduate study programs in education. Reinforcing this state, many universities close their doors to potential researchers by excluding alumni from the use of the facilities once they have obtained their degree.

These circumstances illustrate the weakness of the Colombian scientific community. Until the average university professor participates with commitment in that community, research will have little bearing on the quality of university education or on the demands professors place on their students.

The growth of educational research within the university system, at CIUP and elsewhere, has been paralleled by an attempt to strengthen educational research within the government agencies. By strengthening research within the bureaucracy, it is hoped that research will better serve policy and practice. From 1979 to 1981, the Colombian government aided efforts of two educational research teams within the MOE, one associated with a broad program of rural development, the other with an effort to improve educational planning.

The governmental program for Integrated Rural Development (DRI) was launched in 1974 as part of the social policy incorporated in the Four Year Development Plan of the Lopez Administration. It sought to integrate small *campesino* (rural) producers to the mainstream of the national economy through development of the necessary socioeconomic infrastructure. Among the objectives of the program is a widening of the coverage of, and an improvement in the quality of, education and a raising of the educational levels in the rural areas. To help guide the DRI program, several research projects were undertaken.

Initially it was thought that the research should be contracted out to several public universities. A series of coordination bottlenecks, however, prevented this, and it was decided then that the Planning Bureau of the MOE would assume responsibility. Accordingly, a special office devoted to research on DRI projects was created as a part of the Planning Bureau. The young researchers hired produced six final reports in about 2 years' time. These reports presented educational and demographic characteristics of eight departments (states) and described the stage of rural development in each.

A second, and more extensive set of activities, was carried out under a program titled "Administration, Planning and Research in Education." Under the strong leadership of a UNESCO adviser, Guillermo Briones, evaluative studies of national educational programs and five studies on human resources were completed between 1978 and 1981.

Although difficult to determine, the impact of these studies on policy or implementation seems to have been slight. The studies produced some potentially useful new data and added several new themes to the literature. They did not lead to methodological advances. Indirectly, the information has helped to provide a stronger base for planning efforts, including those presently under way as part of negotiations for a World Bank loan. There is evidence that a portion of the data found its way into general planning or policy documents — in the same descriptive form in which it was produced.

The contribution of these government-based initiatives to the institutionalization of research in Colombia is also difficult to assess. Whether or not the process helped move government officials to be more receptive, in general, to using hard data collected systematically is doubtful, receptivity lying much more in transitory individuals than in the system.

Whether or not it helped provide continuity in research is open to question, at least in part because it is too soon to see results. The studies that were done were generally isolated efforts, responding to a demand or idea of the moment rather than to a desire to strengthen planning and monitoring by carrying out repeated studies. No attempt was made to "add up" results. Diffusion of results was not broad. There was no active participation by the government-based researchers in nongovernmental research networks.

Before a judgment can be made, several current discussions must run their course. The most important of these is the negotiation with officials of the World Bank regarding a pending education loan. One major item on that discussion agenda is continuity of the research within the Ministry. Funds do not seem to be forthcoming from the regular budget and it remains to be seen whether or not loan funds will be appropriated. The same is true for the uncertain future of a continuous data-collection system experimented with under the project during Briones' tenure. Finally, we do not yet know whether or not the individuals who received some on-the-job training in the research process will be able in the future to apply that experience.

Networks

Before 1978, there were no formal education research networks functioning in Colombia. Communication among researchers remained informal and sporadic. From 1979 to 1981, two initiatives helped increase formal contact and communication among researchers. The first was a national effort mounted by COLCIENCIAS. The second initiative involved formation by six private research institutions of an interinstitutional committee for educational research.

COLCIENCIAS is a semigovernmental institution created in 1968 and charged with strengthening science in Colombia. Its emphasis is on the natural and physical sciences, but some funds are allotted for the programing and support of research projects in the social sciences as well. In June 1977, the then Vice-Minister of Education requested COLCIENCIAS to take responsibility for strengthening and supporting research in the field of education, in the absence of a special institution established for that purpose. In part, the request was to fill a gap left by the demise of the ICOLPE, which had carried that function, not too successfully, from 1968 to 1975. In part, the request from the Ministry was motivated by a desire to harness research to help upgrade the quality of education and to help seek out and evaluate innovations. COLCIENCIAS accepted this challenge.

The 1st year's activities within COLCIENCIAS were dedicated to developing a set of priorities for educational research. To that end, a set of interviews was carried out with leading educators and educational researchers throughout the country. Results were tabulated with the idea that they would be fed back to the original respondents to obtain a second round of responses (and in the process raise the consciousness of those involved). That never occurred. During the year a committee was formed to provide guidance. The committee suffered from staff turnover and lack of leadership. Five projects were funded from 1977 to 1978, one of which involved partial support for a survey of educational research from 1960 to 1978. Total funding in 1977/78 amounted to about U.S.$16 000.

In October 1978, a new approach was begun, replacing the earlier diagnostic phase with an emphasis on funding specific research projects. Rather than trying to attract researchers by offering funds in certain preset, priority areas, COLCIENCIAS sought to stimulate research by funding projects that were ongoing or that researchers themselves felt were important. Programing was to follow research, not vice versa. Behind this approach was a desire to improve the second-class status of research on education by providing funds to good researchers who would lend their prestige and, it was hoped, produce high-quality results.

To carry out its strategy, COLCIENCIAS staff visited research institutions to find research in progress that needed assistance and to discover projects people would like to do. Although the staff did not have a set of rigid priorities in mind, it did look for possible projects in two areas: preschool education and research dealing with teachers. These areas had been identified as important in the earlier COLCIENCIAS exercise and in the review of research covering the period from 1960 to 1978.

In 1979, 15 projects were funded by COLCIENCIAS, ranging in value (of the COLCIENCIAS contribution) from U.S.$1000 to U.S.$20 000. The total amount spent was roughly U.S.$120 000. All but two of the awards were made to university-based researchers. Support was given to a wide range of research including experimental, historical, survey, and evaluation research, carried out by researchers from several disciplines. These activities were buttressed by support for seminars dealing with appropriate technology in education and research on preschool education, by a short course in project evaluation within education, and by support of a national seminar on education, an initiative of the Interinstitutional Committee for Educational Research. The Advisory Committee to COLCIENCIAS was revived to review projects and discuss general guidelines for activity in the field. Two publications were funded, one from the Appropriate Technology Seminar and the other, a bulletin titled "Educational Documentation."

In 1980, COLCIENCIAS again shifted its emphasis, devoting energy toward setting out policy, derived from the earlier experience, and toward completing, or in some cases beginning, the research funded in 1979. Thus, relatively few projects were funded in 1980.

What has been the impact of this limited and relatively inexpensive flurry of activity? By providing some leadership and a degree of certification of research, COLCIENCIAS seemingly provided leverage on other funds and increased, at least temporarily, the general prestige of the field of educational research. Perhaps the best example is that of a U.S.$20 000 grant made to the University of the Valley. Once that grant was approved by COLCIENCIAS,

the University and the Foundation for Higher Education together contributed another U.S.$160 000. A shot-in-the-arm was given to particular institutions, specifically to the University of Antioquia, the Pedagogical University of Antioquia, and the National Pedagogical University, by providing some attention when there had been little before.

The strategy paid relatively little explicit attention to infrastructure, although it did fund one bibliography and the documentation bulletin. The Advisory Committee meetings, the seminars, and the training course helped communication among researchers. Perhaps the best example is that of an ongoing and fruitful dialogue among researchers of different persuasions working in the field of preschool education.

COLCIENCIAS also helped break a seeming monopoly by empirically oriented researchers with grounding in sociology or economics by funding some historical and experimental psychological research. Relatively little impact occurred on research skills. Rather, the project sought to draw out and support existing research talents, providing the entrepreneurial initiative that seemed to be missing in the researchers and in the organizations of which they were a part.

How lasting these apparent advances will be remains to be seen. A decrease in activity in 1980 does not bode well. An attempt to develop an interinstitutional project in history has not yet taken hold after a year and a half, hampered by an air of reserve among the four institutions involved. In the opinion of the COLCIENCIAS staff, stimulating interinstitutional collaboration within particular subfields is, nevertheless, the next most important step to take.

The Interinstitutional Committee for Educational Research arose at about the same time, in late 1978, that the COLCIENCIAS strategy was beginning to take hold. It contrasts with the previous strategy because it groups private institutions, is informal, is restricted to institutions in Bogota, and is supported mainly by foreign funding. Six institutions originally made up the Interinstitutional Committee. The first, the Instituto SER de Investigación, is a multidisciplinary research and consulting organization headed by a former university president who is well-connected within the public sector. SER depends upon contract research and grants and draws funding from both national and international sources. Second, the Fundación para la Educación Superior y el Desarrollo (FEDESARROLLO) is also private, depends mainly upon research contracts, is headed by an exminister of finance, and emphasizes economic analyses. It has both national and international funding. Third, the Corporación Centro Regional de Población (CCRP) is also well-connected to the public sector, depends upon contracts, leans on international funding, and emphasizes demographic research. Fourth, the Centro de Estudios sobre Desarrollo Economico (CEDE) lies within the private University of Los Andes. Although it is university based, most of its research is also by contract, and researchers must scramble for grants.

Before turning attention to education, these four institutions had established reputations through the previous research work of their economists, demographers, engineers, and sociologists. With the injection of funds and the budding interest of particular researchers in each institution, all four moved easily toward research on education.

The fifth participant in the Interinstitutional Committee, ACPO, has its roots in a program of nonformal education by radio set up and promoted by the Catholic church. In recent years the program has loosened its ties from

the church and has developed an inhouse research capacity. The organization is not dependent on external funding but does seek such funding for its research. Sixth, the Foundation for Permanent Education in Colombia is a research-oriented, private organization focusing on nonformal education. It, too, depends upon contract research.

To these last two institutions, which come at educational research from within the field of education rather than from outside, two more were added in 1980: the Research Center of the National Pedagogical University (described earlier) and the Educational Research and Technology Program within Javeriana University (also a private university), offering an MA in educational research.

The origins of the Interinstitutional Committee lie in part with a shared concern that the Colombian educational research community needed leadership and revitalization. At the time, the COLCIENCIAS effort to stimulate research had not yet gained momentum; even if it had, however, there were several practical reasons why a complementary initiative was set in motion by private institutions depending for their existence on their ability to obtain research funding. First, COLCIENCIAS had the reputation for being unconscionably slow in their decision-making process and in distributing funds. To these private institutions, delays and related cash-flow problems can be very costly. But more important, COLCIENCIAS had a strong bias toward the universities, particularly the public universities, for two reasons. First, given their limited funds, COLCIENCIAS did not feel it could afford to pay the high overhead private institutions charge. By way of contrast, grants to universities could provide leverage on university funds and usually did not have to pay salaries or overhead. Second, the COLCIENCIAS staff felt that new ideas were more likely to come from the university than from the more technically oriented private sector. Two other factors helped explain the formation of the Committee: the personal leadership of Agustín Lombana, and the fact that Lombana was then acting as a consultant to the Ford Foundation, which seemed predisposed toward support of collaborative research.

The Committee met regularly and frequently over a period of 7 months in late 1978 and early 1979. Members attempted, as a group, to develop a research agenda, but wound up with a very general set of research categories staking out the field: education and economics, education and culture, education and politics, education and social differentiation, and teaching. Individual institutions then formulated research proposals within the respective themes and presented the package to the Ford Foundation for funding. Each of the five proposals in the package had been aired and critiqued at meetings of the Committee during 1979. Also included in the package were funds to help organize a national meeting on educational research, design a joint research project, and support a coordinator (Lombana) working part time. Funding was approved by the Ford Foundation in early 1980, at a level of U.S.$215 000.

In April 1980, a national seminar was held, planned and administered by the Interinstitutional Committee, with financial help and staff participation from COLCIENCIAS. At the meeting, five state-of-the-art papers were presented and critiqued, and working groups discussed each main theme in greater detail. The 80 participants came from private institutions, universities, and the public sector. A report of the meeting was distributed, and three of the state-of-the-art papers were published in the "Colombian Review of Education." Beyond that, it is difficult to know whether or not the meeting had an effect. It

did help mobilize COLCIENCIAS and it did put a number of people in contact who had not met before, but there was no other follow-up.

The Committee has continued to meet sporadically. It has formulated a joint proposal — a major accomplishment — in which the several institutions have fashioned a questionnaire and field study around the theme "Income Distribution and Education in Rural Colombia" and from which each institution will draw data for analysis of a different aspect of the theme. Proposals have been critiqued within the group. In addition, the Committee has begun a seminar series for researchers, the first of which was very well attended.

What have been the results of this approach to strengthening research capacity? To a degree, the Committee has helped integration and communication among researchers, at least among those immediately involved. However, the group is small, has expanded slowly, and has been seen by some outsiders as a clique, seeking preferred access to funds. Its broader efforts — the national seminar and the newer series of research seminars — have not had a cumulative impact. If the seminar series continues, that integrative impact could occur. Despite some differences of opinion within the Committee (between those who are social scientists examining education and those within education applying social science research techniques), the Committee has helped communications across disciplinary lines.

By working within a general framework, formulating a joint proposal, and commissioning state-of-the-art papers, some assistance has been given to integrating and providing continuity in research. In addition, four of the studies continued, but added new dimensions to, previous research interests of the researchers. Seminars have helped dissemination, but mostly to other researchers; a few well-placed and knowledgable civil servants have participated, but not many.

In theory, the members of the Committee have helped sharpen research skills through critiques of each other's research and by discussing issues from several different disciplinary perspectives. However, the ethos is such that the critiques are sometimes very weak. Institutions and the individuals representing them are reluctant to step on each other's toes. Activity by the Committee has helped to fill a gap in entrepreneurial and coordinating skills.

The Committee strategy has, as in the case of COLCIENCIAS, drawn upon existing research talents. It has probably done little to strengthen those talents or the infrastructure of individual institutions, although it has helped maintain them. Together with the COLCIENCIAS strategy, it has added some prestige to the study of education, by involving first-rate researchers in research on education.

Data Base and Data Processing

A relatively ample data base for research on education exists in Colombia but it is not well-organized, lacks periodicity, and may not be accurate or comparable over time (Toro et al. 1979, pp. 15–16). Moreover, as might have been projected from earlier discussions of research topics, skills, and institutions, the data base is not closely tied to the practice of education. Indeed, no national assessment is carried out by the MOE on a periodic basis, although proposals for such an assessment exist and some pilot work has been carried out; for example, work done by the Planning Office in conjunction with the Instituto SER.

The mountains of data that do exist pertaining to education can be found

in historical records, household surveys, nutrition reports, epidemiological surveys, and population studies. Some special research projects, such as the costs and labour market studies of the Programa de Estudios Conjuntos sobre Integración Económica Latinoamericana (ECIEL), have generated large quantities of unanalyzed data.

There is no major problem of computer availability in Colombia. The latest models are on hand. In most cases, financing can be found. Software is still in a pioneer state, but meets most research needs. It is not, therefore, availability but organization for use and access that causes problems. Hampering access are a host of difficulties ranging from university strikes that close libraries and computer centres to bureaucratic demands that cause long delays.

Dissemination and Documentation

Again using information from Toro's and Lombana's (1978) study of research in 1960–78, it is clear that at least three-fourths of all research reported remained in mimeographed or typewritten form. Less than one-fourth of the research analyzed appeared in the form of a magazine article or a book. The general trend is supported by our survey of research from 1979 to 1981. Toro et al. (1979, p. 14) wrote:

> Since 1971, special efforts have been made to accumulate and diffuse research results. ICOLPE prior to its closing in 1976, COLCIENCIAS, ICFES, ICETEX [Instituto Colombiano de Crédito Educativo y Estudios Técnicos en el Exterior], and the National Pedagogical University by way of its *Revista Colombiana de Educación* (1978), have experimented with diverse strategies for diffusing national and foreign research findings. In the private sector, the journal *Educación Hoy* (1971) aims its publication at practicing educators.
>
> COLCIENCIAS and ICFES have established a reference service, with support from the World Bank, and according to informal sources, has generated bibliographies in response to more than 1000 requests. Javeriana University is establishing a catalogue and archive of educational research, beginning with the works analyzed by Toro and Lombana. Supporting bibliographic sources in the social sciences generally has improved considerably in recent years. Thus, although the COLCIENCIAS study notes that bibliographic sources and documentation are weak, the situation is not bleak and is improving rapidly.

Recently, some experimentation has occurred to try to move research findings from the printed page into action. The journal, "Educación Hoy," has organized a series of seminars with teachers in an attempt to meet their needs and to demonstrate how research results reported in "Educación Hoy" could be useful in practice. The growth of action research is aimed also at improving dissemination by bringing the researcher and actor together from the start. Despite these efforts, there is enormous room for improvement, which is something that will require, eventually, a broad change in attitudes among Colombian educators and bureaucrats.

Funding

Educational research in Colombia is supported with both national and international funds. The main public-sector sources of national funding are: university budgets, which cover researchers' salaries but little else; COLCIENCIAS; and the Bank of the Republic. Occasionally, the MOE

contracts research. These sources are less attractive than they might be because of the excessively bureaucratic procedures involved in obtaining awards, long and inevitable delays in payment, and the failure to provide "overhead" — conditions that particularly affect private research organizations trying to survive on contract research. Private-sector support for research is not large, but the Foundation for Higher Education, the Caravajal Foundation, the National Association for Industry and Finance, and others provide some funds. These funds are not available in open competition.

Although information about sources of funding for research is far from precise, it is evident that foreign funding has played, and continues to play, an important role in support of educational research in Colombia. A survey by COLCIENCIAS (1978, pp. 16–17) of research in 1972 and 1977 indicated that almost one-fourth of all social science research carried out in Colombian universities was funded from foreign sources. Because private institutions are likely to have an even higher percentage of their funding from abroad and because educational research has in recent years been increasingly located in private institutions, it is likely that dependence on foreign funding is even higher. Our own survey of research, 1979–81, supports that.

It is not our purpose in this paper to analyze the effect of foreign funding on Colombian research. Certainly, however, Colombian institutions are influenced by international fads and fashions. At the same time, foreign funding can provide local institutions with an additional degree of freedom to pursue critical research that would not be funded locally. In some instances, the government welcomes foreign funds for research, desiring the information it will produce but finding it difficult for political reasons to justify support for research within its own budget.

From our information, we are not able to determine whether the level of funding available for educational research is adequate or whether it is increasing or decreasing. More important than such information, however, would be a better fix on sources and modes of funding. These not only influence the form and content of research but the process of institutionalization as well.

Training

The ability to train a next generation of researchers provides one test of whether or not a national research capacity is in place. That capability does not yet exist in Colombia in education, despite the presence of considerable research talent. Only one major university program exists specifically to train researchers in education at the MA level, and this is at Javeriana University. One other MA research program has sprung up outside the university system within the last year. (CINDE, in Medellin, has embarked on an ambitious program, drawing its teaching talent from Colombia and providing certification through an arrangement with NOVA University in Florida.) No doctoral programs exist. For some time to come, most Colombian educational researchers will probably continue to be trained abroad or will receive their training outside the field of education, then turn their attention to educational research.

Summary and Conclusions

Since 1960, educational research in Colombia has grown and changed dramatically. An active cadre of qualified researchers has formed, often attracted

to the study of education from other fields. A process of institutional, thematic, and methodological diversification has occurred and is evident in the growth of educational research in private centres and within the government as well as in universities. Greater attention is now being paid to the content and quality of the educational process itself. Microlevel classroom studies and ethnographic research have appeared alongside the macrolevel research, based primarily in economics and sociology, that characterized most of the 1960s and 1970s. Research has become more sophisticated and analytical. The data base has improved.

A relatively stable political climate during the period and an increasingly technical attitude within government helped research grow, but the demand for research is still low and a research mentality is not widespread. Despite a long tradition of inquiry in Colombia, researchers continue to face major institutional and sociocultural obstacles to their research. Research incentives are lacking.

With many of the elements of a national research capacity present at a relatively sophisticated level (researchers, institutions, data, and some publications), a major question now seems to be how to organize and coordinate research activity so it can have a cumulative impact on education. Questions of continuity, stability, and communication within educational research are closely related. Throughout the period, skills needed to organize and promote educational research were in short supply, and general conditions were not conducive to attract them from other fields or to develop them.

Since 1979, and beginning somewhat before, several strategies have been pursued in Colombia, consciously or unconsciously, to strengthen and consolidate educational research. In our discussion of institutions and networks, we described four specific strategies:

- Institutionalizing research within the Bogota-based National Pedagogical University places research close to the training of educators in an established, publicly funded institution one step removed from the government. The Centre has taken a coordinated, critical/analytical approach to research, applying several disciplinary methods to a set of selected problems.
- The MOE, with foreign funding, has tried to institutionalize research in house and bring it to bear on policy and planning through diagnostic/descriptive work.
- COLCIENCIAS, operating with public funds, has focused primarily on educational research in public universities. Acting as a catalyst and with a more general scientific purpose in mind, it has supported individual researchers' projects, tried to promote communication among researchers through seminars and joint projects, and provided national diagnoses of research needs.
- Finally, the Interinstitutional Committee for Educational Research, established with foreign funds, has attempted to strengthen educational research by regularizing informal communication and debate among research institutions, by brokering projects, and by fostering joint research. The Bogota-based network comprises almost entirely private-sector institutions.

These strategies should be seen as complementary initiatives. They reflect, and have stimulated, diversification and differentiation of research. In a greater or lesser degree, each has helped identify and fill research gaps, added prestige to the research field, and facilitated communication among researchers (less often with policymakers). In the process, a slow start has been made toward filling the important gap in the entrepreneurial and organizational skills mentioned earlier. None of the strategies seems to have had a major impact on

the Colombian ability to produce a "next generation" of educational researchers. Nor have they had much effect on the general research climate, incentive systems, the ability to publish, or the demand for research. They have, however, increased continuity in educational research by strengthening institutional bases, capturing funds, stimulating professional exchange, and setting problem areas to be tackled over time in something other than an ad hoc fashion.

The following points are intended as a basis for general reflection on the process of strengthening a national educational research capacity based on the Colombian experience:

- In the earlier stages of expansion of an educational system, the need for diagnostic and descriptive studies predominates, reinforcing a tendency to disregard the analytical work that takes place at the margin, and mostly in universities, and to favour quantitative over qualitative research. As expansionist pressures decrease, qualitative research, often restricted in scope, becomes more common. This can aid the process of differentiation, but also encourages disciplinary research outside the confines of the university.
- There is a tendency for research to become increasingly decentralized and differentiated over time — in terms of goals, methods, themes, and institutional locations. Institutional differentiation of research occurs as research capacity grows. Government agencies sponsor specific, self-contained research projects oriented toward planning and implementation, often of a descriptive, diagnostic, or evaluative nature. University-based research is likely to be disciplinary, basic research, sometimes critical in tone. Private research centres, usually depending upon contract research, attempt to combine basic research with evaluations. Most so-called action research is also located in private centres.

The process of differentiation brings with it the advantages of specialization, and opens opportunities for institutions with new and imaginative research and methodological strategies. At the same time, the process can create communication gaps among researchers and further divorce research from policy. Thus, conscious efforts are needed increasingly to bring together researchers, to accumulate research results, and to foster communication between researchers and policymakers.

- Strategies directed toward creating or supporting informal and formal networks at personal and institutional levels and toward greater dissemination of research results can be used actively to support specialization, consolidation, and deepening of research. That strategy contrasts with after-the-fact attempts to strengthen communication once differentiation has taken place. A networking strategy has played a catalytic role in education in Colombia. (In other parts of the social sciences in Colombia, consolidation of research occurred first — then networks grew.) The catalytic effect of a networking strategy will depend on the presence of skilled researchers and on the timing of the effort. To avoid restricting communication among researchers, it is probably necessary to promote multiple networks, particularly as the size of the research community grows.
- Research entrepreneurship and organization are missing and are increasingly important capacities as research grows. It is not enough simply to build up a stock of methodological and substantive expertise, something that can occur relatively quickly in the first stage of building a national educational research capacity. An unstable institutional environment and lack of incentives work against attracting existing talent or developing those talents. Several strategies can be followed to help fill the gap, including providing entrepreneurial and organizational assistance from a central point (as done in COLCIENCIAS),

supporting informal leaders with those abilities (as in the Interinstitutional Committee), and strengthening organization within particular institutions (as in CIUP). Until strong local research institutions are in place, other organizations, and particularly funders, are likely to play an influential role, affecting research priorities and styles.

- By attracting capable researchers trained in other areas to the field of education the prestige of research in education can be increased. Prestige is also aided by supporting a mix of research activities, including basic or disciplinary research as well as applied or policy-oriented research.
- A host of methodological approaches can be applied with varying degrees of success depending on the outcomes desired and the people involved. "More sophisticated" is not necessarily better.
- Insufficient attention is given to the difficult task of locally training the next generations of researchers. One of the first steps toward such training may be the creation of a small community of researchers whose academic contribution will force administrative attention to research.
- Modest financial support can go a long way toward strengthening research capacity, productivity, and use by identifying and supporting isolated researchers, adding in entrepreneurial and organizational skills, and promoting joint projects.
- Efforts to identify priorities and gaps can help stimulate research in missing areas and help vary methods applied to the study of education.
- Influencing the climate for research is extremely difficult and cannot occur over a short period except superficially. Colombia's history of inquiry, experience of social research, and relative openness favour research, but a tradition of received wisdom works against the spread of a research mentality beyond an elite.

The authors would like to thank particularly Alvaro Pantoja, Agustín Lombana, and Gonzalo Cataño for their comments and suggestions.

Mexico

Analysis of Educational Research Capacity in Mexico: Guidelines for its Development

The environment for research in Mexico, unlike many of those described here, is a relatively rich and advanced one. Funds are available from a variety of public and private sources; research centres abound in universities, government ministries, and the private sector; and new cadres of researchers can be trained in local postgraduate programs. This environment is, therefore, at the "take-off" stage to self-development, self-regulation, and self-financing. Especially important in this process are the networks being developed among researchers and research institutions — networks for the exchange of documents and the dissemination of research results.

As in many countries, however, much of the research, especially that carried out in government centres, is improvised, responding to urgent needs and, therefore, short-term in nature. The growing popularity of contract research assigned to private centres has also led to a focus on feasibility studies, evaluations, and policy-related studies. This has made more difficult the development of systematic programs of research or work directed toward the development of educational and social theory. Also lacking is action research, although interest in this area is growing. Still unknown is the extent to which recent economic difficulties will alter the Mexican environment for educational research.

Several major efforts have been made in Mexico to collect data aimed at shedding light on the nation's capacity for conducting educational research (ER). This information can be of use in making decisions that will help to improve ER both quantitatively and qualitatively.

Most of these efforts, however, were conducted in a fairly independent fashion, and have resulted in a collection of data that only partially cover the universe of institutions, resources, and projects involved in ER, and which are difficult to compare because of their heterogeneous nature. This drawback will be discussed in greater detail in the section on methods.

Now, Mexico is facing serious education problems, such as: the debate between educational quality and quantity, the problem of equal educational opportunities, the demand for advanced and technical education, and the need for guidelines that will increase ER capacity. In addition to these, there are many problems that can no longer be solved by partial measures, but instead require systematic work that will result in defining, evaluating, analyzing, and enhancing research capacity in Mexico.

The information accumulated in studies on ER can be useful in achieving the aforementioned goal, and the idea of analyzing these studies led to the

José Luis Quintero Hernández, Carmen Tamez Muñoz, Patricia Medina Pegram, and Ana María Garza Villarreal *Division of Education Sciences, University of Monterrey, Monterrey, Nuevo Leon, Mexico*

present project. For this analysis, it was necessary to employ a structure that could be used to arrange the information in some kind of logical order. For this purpose, we decided to use the model drawn up by Sheldon Shaeffer for the Educational Research Review and Advisory Group (RRAG) of the International Development Research Centre (IDRC) of Canada (Shaeffer 1979). This model, which will be described in greater detail, provides a structure for examining and enhancing ER capacity in developing countries.

The main objective of this project was to analyze Mexican ER capacity using Shaeffer's model to obtain information on which to base guidelines aimed at increasing ER. Therefore, the Programa Nacional Indicativo de Investigación Educativa (PNIIE) of the Consejo Nacional de Ciencia y Tecnología (CONACYT) asked the Research Unit of the Universidad de Monterrey (UDEM) to conduct a research project. However, the initial project activities made it clear that it would be necessary to modify Shaeffer's model, because it is not totally adaptable to the state of ER in Mexico. In his study, Shaeffer notes that each nation exhibits a different combination of the components that make up the research environment, and, therefore, it is impossible to propose measures suited to developing countries as a whole. Thus, the model only attempts to outline factors related to the problem, and to present a gamut of possible approaches to it, from which planners in the countries in question and foreign donor agencies can select the most appropriate (Shaeffer 1979).

This report is divided into two parts: the first provides a detailed description of the methods used in our analysis, and the limitations that arose; the second is the application of the model to the information contained in the aforementioned studies that were used in our examination of Mexico's capacity, and an analysis of the studies themselves.

Methods

This project began with a search for studies on ER capacity in Mexico, as well as those that could assist in analyzing this capacity, for which purpose we consulted agencies such as the Secretaría de Educación Pública (SEP), Red de Información Educativa (RIE), and CONACYT.

After studying Shaeffer's model to apply it to the information contained in the aforementioned studies, we concluded that it was necessary to make major changes to the model to adapt it to our country. Shaeffer's study contains two stages: the first provides a structure for the systematic analysis of research capacity in developing countries, and the second proposes a framework for action that can be used in planning projects to enhance concrete aspects of this capacity.

The first change we made to Shaeffer's model had to do with the concept of research itself. Although he defines it simply as "the production of knowledge," it would be more appropriate for the Mexican situation to apply a definition that situates this activity within a broader context of educational change. This consists of "the set of systematic and deliberate actions that lead to the formulation, planning and production of new values, theories, models, systems, measures, evaluations, procedures and patterns of conduct in educational processes" (Latapi 1981).

Shaeffer's definition assigns priority to an in-depth study of those who produce knowledge — the researchers. But the definition used in this project

implies that ER must be viewed as an activity conditioned in many ways by the social, political, and cultural structures of a society. Its meaning cannot be fully understood through a mere description of the most obvious components (institutions, investigators, projects, etc.), even when we include the qualitative aspects of these components. To understand, evaluate, or diagnose ER, it is necessary to take into account the social conditions that apply at the time the analysis is conducted (Latapi 1981).

On the other hand, for Shaeffer, ER capacity is determined by the number and quality of the factors that make it up, and, although in his model he does propose a study of the political and social environment surrounding research and its institutional structures, he limits the analysis to a given number of components contained in that environment. The reason why he places limits on his approach is because the list of these components would be endless otherwise. But we believe that if we really wish to discover a nation's capacity to conduct ER, it is not sufficient to describe the state of the elements of which ER is composed, but instead it is necessary to study, at a given moment in time, all those functions, relations, mechanisms, etc., that determine ER, the way in which they do so, and their dynamic interaction with elements such as researchers, projects, and units. Vielle (1981a) suggests that in all cases it is necessary to determine ER capacity based on ER functions and processes in a given social system, and on the way in which the ER process is carried out, its results and its impact, instead of using a vague list of elements to be studied, which includes the organization and operation of the system as merely one more element.

In the second part of Shaeffer's model, the framework for action is determined by the results obtained from applying matrices to examine the sectors that conduct ER in a country, and that also include certain aspects of ER. In our case, matrices of this type could not be prepared, because no homogeneous information was available on which to base them.

The model used for this study was determined on the basis of the points already discussed (see Appendix):

- Social environment includes the social, political, and cultural context within which ER is conducted in the country and an explanation of how it affects the nature, development, and impact of ER.
- Organization of ER in the country refers to an analysis of ER capacity in Mexico based on the way it is organized to explain how the distribution of ER, at the national level and at the level of sectors and units, influences this capacity.
- Human, material, and financial resources refers to the study of these resources and an analysis of this information to discover what influence these elements have on ER capacity in the country and what improvements or changes would help to increase this capacity.

To carry out the operations implied in our model, concrete indicators were determined for the analysis of each aspect of ER. Shaeffer's model specifies some elements to be measured, but does not specify the indicators that are required to do so. Therefore, during the stage in which the model was adapted, we determined variables and indicators for each of the aspects established for the new model (environment, structure, personnel, and resources).

Once the aspects, variables, and indicators were determined, index cards were prepared. They were classified in accordance with the framework of the model we employed, and contained both the contextual and the statistical

information needed for the model. This information was taken from studies we used in analyzing ER capacity.

Once the information was classified, the data were analyzed. The analysis varied according to the subject studied in each section. The section on the social environment analyzes the historical factors that have determined the current state of ER in Mexico. The section on the structure of ER combines information on the operation of ER centres and the agencies that regulate various aspects of ER using data obtained from inventories. In the sections on ER personnel and resources, the major part of the analysis is based on numerical data and, to a lesser extent, on bibliographical information from various sources. The next stage was to prepare the conclusions and to propose guidelines based on them.

The main sources of information used in this project are:[1]

- 1974 National inventory (DGCE–SEP 74). This inventory was prepared by the Dirección General de Coordinación Educativa (DGCE), which comes under the SEP. CONACYT questionnaires were used, which adhered strictly to international definitions of basic research, applied research, experimental development, and support activities (publications and training). The inventory detected units within institutions and covered 65 units and 276 projects. The coverage was not total at the national level. The sectors covered were: federal government, state governments, decentralized agencies, other government agencies, private enterprise, private centres for advanced education, nonprofit organizations, and agencies dependent on foreign funding (Vielle 1981b). From this inventory, the "Profile of Research on Education Sciences and Techniques" was obtained, which covered only 21 centres detected by DGCE–SEP 74, and the data were analyzed, regrouping the sectors into: federal government, state governments, decentralized agencies, centres for advanced education, nonprofit organizations, and the foreign sector.
- 1979 PNIIE–RIE inventory (PNIIE–RIE 79). This study uses a new classification of ER activities prepared by Jean-Pierre Vielle that divides ER into research on the various fields of study, research for planning, instrumentation research, action research, research on bibliographies and documents, and research about research. The study detected 61 ER units and more than 485 projects. It covered the following sectors: public sector, higher education, private centres, foreign sector, and documentation centres. Its coverage was not total either.
- 1980 SEP inventory (DGP–SEP 80). This inventory, by the Dirección General de Planeación (DGP–SEP), made it possible to cover all ER units in the public sector for the first time, including the Regional Technological Institutes (RTIs). It detected a total of 123 units and 450 projects. Its sole limitation was that it covered only the public sector.
- 1979 Javier Barros Sierra Foundation inventory. Six different questionnaires were used covering 24 institutions responsible for 300 projects. Detailed information is available for only 206 of these projects, because the replies were incomplete in many cases. The approach taken in this study was aimed at

[1]The first version of this study was completed in November 1981 on the eve of the National Congress on Research on Education, which provided a vast amount of information of interest to this study. However, because of insufficient time, and the fact that additional information would not lead to any major changes in our conclusions, we chose to limit our analyses to the information available up to the date of the Congress.

analyzing projects, and not ER units, which is why no stress was placed on detecting the number of units in each institution. Basically, it covers the same sectors that were studied in the inventories already mentioned.

- 1981 Diagnosis of ER in RTIs. This study contains information on ER units within a sampling of RTIs. The objective was to learn more about the type of research currently being conducted at the RTIs, identifying the results, resource requirements, and fields of investigation within the institutes, to serve as guidelines for planning, operations, and future evaluation. It proposes an ER plan to standardize units within this type of institute, in which the first step would be to prepare an ER inventory.
- Preliminary results of the 1981 Survey on the State of Research on Education Techniques (conducted by the Education Techniques Commission for the ER Congress). This study covered 84 projects conducted by 41 ER units and included interviews. The aspects studied were: financing, human resources, progress of the projects, objectives, methods, dissemination, characterization, definition of educational techniques, innovations, obstacles, and main theories. It covers various sectors.
- Capacity and impact of ER. This is the final report of the project PNIIE–RIE 79, and analyzes all the information on the impact of ER including the following aspects: ER capacity, network of ER centres, dissemination as a factor that determines the impact of research, the impact of ER, links between research and the decision-making process, intervening factors between research and the decision-making process, decision-making processes, and the place of research.

This study uses information contained in an inventory based on a sample of 50 units, divided by sector in the following way: public sector, 11; higher education, 23; private centres, 10; foreign sector, 2; and documentation centres, 4 units.

It also uses information from: surveys related to the seminar on "Inequality of Educational Opportunities," answered by investigators and decision-makers; opinions expressed by the participants in this seminar on the role of research groups within the administrative apparatus of the education system; and participant observation conducted by external observers at the seminar and at another seminar held in Cocoyoc.

The inventories used most were DGCE–SEP 74, PNIIE–RIE 79, and DGP–SEP 80. Figure 1 shows how they overlap and the number of centres studied in each inventory. The total number of centres detected in the three inventories was 203, but we must stress that we are not certain whether the 33 centres contained in DGCE–SEP 74 that do not appear in either of the other two inventories still exist, or whether or not they exist under other names.

Limitations of the Study

The description of sources gives an idea of the first limitation faced by this study: the fact that the data are not homogeneous because of the different coverage of the studies available. Certain studies cover only samples of a given sector (e.g., "Diagnosis of ER in the RTIs"), others cover unrepresentative samples of all sectors (e.g., PNIIE–RIE 79, DGCE–SEP 74, and the Javier Barros Sierra Foundation inventory), another study covered several sectors, but only included centres that were conducting projects on education techniques (e.g., "State of Research on Education Techniques"). Also, the various studies

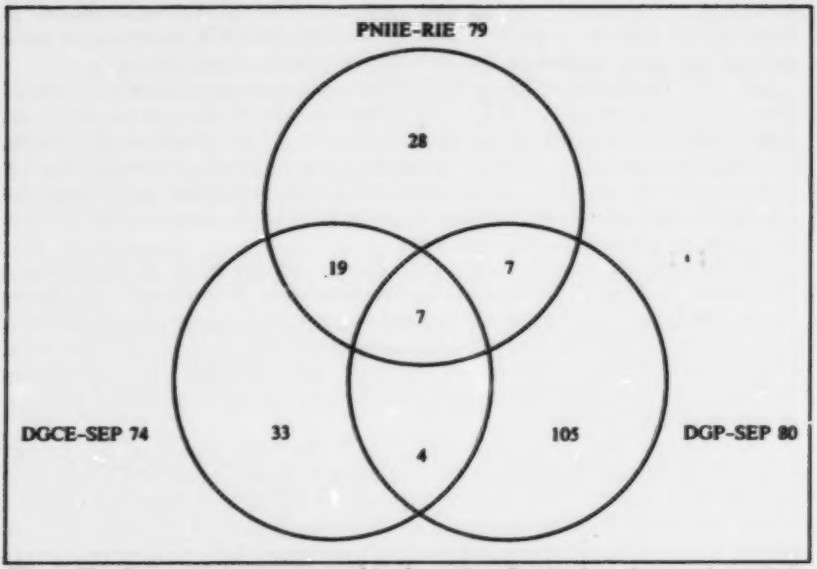


Fig. 1. The three main inventories used in the study indicating how they overlap and the number of centres studied in each inventory.

did not collect the same kinds of data. This limitation supports the idea of preparing a general plan for compiling inventories.

On many occasions, we were unable to obtain the information required to reach or support a conclusion. Therefore, many of our conclusions are accompanied by the clarification that further information is needed to supplement the scope and accuracy of the conclusions. Another limitation was that the sources of information for the project were located in the Federal District, whereas the investigators responsible for preparing this study were living in Monterrey, which made access more difficult.

Social Environment

Just like any other social activity, educational research does not take place in a vacuum, but rather arises within a society whose historical and cultural roots and institutions give it life, define it, and help to explain both its qualitative and its quantitative development. The historical perspective is especially important in the case of Latin American countries, where economic and social changes in the last 25 years have been so major that the years before World War II appear to be ancient history, having little or no relevance in explaining contemporary structures (Rama 1980). Nevertheless, the culture of a society tends to survive changes in the economic and political structures that created it, which is why a study of a culture is especially valuable in explaining both the peculiarities of the processes of change and the resistance to change in each society.

However, it is beyond the scope of this study to conduct an in-depth historical analysis of the social environment in which ER developed in Mexico. The first part of this section merely aims at outlining the main features of

society, education, and the development of ER that can serve as a framework for the description of the characteristics that ER exhibits today in Mexico.

Sociocultural Characteristics

The cultures of indigenous and colonial societies were rooted in religious attitudes, beliefs, and myths that did not encourage critical analysis or a decision-making process based on a prior objective evaluation of reality. The long cultural dependence of New Spain on European centres held back the early formation of a native tradition of scientific research. The theological dogmatism on which all education in this period was based also contributed.

Although the Wars of Independence in many Latin American countries "did not imply essential changes in either production structures or in dependency relationships among social groups, and even less so in the values and manifestations of the original colonial culture" (Rama 1980, p. 10), in Mexico, the triumph of the liberal ideas of the Reform, and above all the 1910 Revolution, led to profound changes in existing economic relations, and permitted the rise of an elite that sought to make changes in the nation's institutional life, and whose beliefs were also a powerful factor in the transformation on the sociopolitical culture of the nation. However, the slowness with which cultures tend to change limited the evolution of institutions. In this way, the liberal ideal of a democratic and federal government has, in reality, produced an authoritarian and centralist system of government. This is a determining factor in the way in which social research developed in Mexico, and more especially ER. Instead of being an activity originated and supported by a large variety of social groups who seek to improve their activities or justify their interests, research tends to grow under the sponsorship of the government, in support of its sociopolitical objectives, except when it is diverted to meet the intellectual, social, or individual interests of public servants. Under these circumstances, the development of ER tends to depend, to a large extent, on the professional level of the public servants who approve or request research activities, their social conscience, and their knowledge of educational problems. These factors can be changed through the relationships that are established between public servants and researchers, which is why in this study special attention is paid to this aspect.

Characteristics of Education

During the early stages of Mexican independence, education developed slowly because of the nation's lack of stability. It was only after the Revolution, when the SEP was created in 1921 and a firm decision was made to involve the federal government in the provision of education services, that a national education system began.

In 1940, the government's political interest in developing education began to coincide with the demand for education by the middle and lower classes that, for financial reasons, sped up the process of developing the system. Because of this late and rapid development, quantitative aspects have been given priority in the educational history of the nation over the last 50 years, due both to the stress placed on teacher training and to the writing and free distribution of school textbooks. Because the demand for education was stronger in the urban middle and working classes, the education system grew more rapidly in the cities than in the countryside, and the secondary and advanced levels tended to develop there, even before basic education had been extended to the population

in general, especially the rural and indigenous population.

However, because the demand for urban schooling has recently been almost completely met, education authorities tend to pay more attention to providing better education alternatives for less densely populated areas and for adults, which could not be dealt with earlier by the school system, as well as to improving the quality of the education provided in urban schools. This makes it necessary for ER to go beyond the study of merely quantitative aspects of the supply and demand for education in a search for alternatives that will improve the coverage of the system in marginal areas and enhance adult education and the quality of services that are currently being provided under the present school system.

Also, the ideology of the Mexican government, due both to its historical liberal roots and its concern in recent decades with promoting economic development, is especially sensitive to the contributions that can be made by the educational system to the nation's political, social, and economic development. At the same time, in the degree to which Mexicans are affected by urbanization and industrialization, they discover that school education can provide a mechanism to fulfill their aspirations for intergenerational social mobility. Therefore, education can acquire a strategic value as a factor that encourages economic development and a mechanism to regulate the population's aspirations. This situation explains why educational research is oriented more toward the justification of short-term measures that have high political value, than toward seeking long-term solutions for the major needs of the population.

In a rapidly developing country such as Mexico, education must compete with many other sectors of economic activity, which is why the degree of priority assigned to education can be measured by the percentage of the gross national product (GNP) spent on education. This has varied significantly in Mexico, from 2.56% in 1971 to 4.16% in 1978 for a 62.5% increase, or, in other words, an annual growth rate of 8.92% (Lopez Portillo 1981, pp. 15 and 24), a circumstance that may favour the development of ER at this time.

Development of ER

Like other social activities, ER has grown in Mexico as the result of widely diverse initiatives. Within the government sector, ER first began with the foundation of the National Pedagogical Institute in 1936 (afterward the National Institute for Educational Research) coming under the SEP. During his two terms as Secretary of Public Education, Dr Jaime Torres Bodet encouraged major ER activities, closely linked to education planning activities, such as the Eleven Year Plan. The creation of CONACYT and the National Program for the Advancement of Educational Research (PNIIE — previously the National Program for Education Sciences and Techniques) led to more systematic activities to promote and guide ER, including the organized participation of those individuals involved in it. At the beginning of the 1970s, during the government of Luis Echeverría, ER was concentrated in the SEP under the DGCE especially in regard to the problems of higher education, a subject of great interest to the government in question.

Outside government, the creation in 1963 of the Centro de Estudios Educativos (CEE) gave a new impulse to ER, because of its emphasis on education problems that were of greatest interest to society as a whole, and the use it made of the press to explore problems of education and encourage discussion. This debate became particularly intense regarding the school set up

in Cuernavaca by Ivan Illich, which has had worldwide repercussions.

In contrast with English-speaking countries, ER has been assigned less importance in Mexican universities. Mexican universities were created following the Napoleonic model in France and basically offered degrees in nonscientific fields, and "their institutional outlook continues to regard their main function as the transmission and not the generation and projection of knowledge" (Lomnitz 1981). Also, the Mexican university tradition does not include teacher training among its activities. Teachers are trained within the nation's normal school system. Therefore, the research impetus that has arisen in Mexican universities has had difficulty in reaching the world of education. Nevertheless, with the appearance of new education programs at the Licentiate and MA levels, these institutions have also become interested in ER.

By the beginning of this decade this historical evolution had resulted in the creation of an organizational infrastructure that converted ER into an activity of considerable dimensions. This situation coincided with the return of many postgraduate students from national or foreign universities. Therefore, the situation of ER at the beginning of the 1980s is considerably different from that of the 1970s or 1960s, both quantitatively and qualitatively. In contrast with earlier periods, Mexico now has a group of education researchers that have received adequate training, and possesses an internal dynamism that allows ER to exist without relying on outside aid, because it is beginning to be funded from the regular operating budget of the official system of education.

Characteristics of the Scientific Community

For historical and political reasons, the development of scientific and technological research in Mexico has outstripped social research, which began to develop at a late date. In spite of the rapid growth in this field, its relative importance remains small within the total framework of research in Mexico.

With the exception of advanced education, it has been difficult to create ties between educators and social scientists. This is due in part to the lack of group identity among social scientists. Unlike other countries, no numerically significant associations of social education researchers exist, nor do they have the necessary strength to promote, legitimize, and give prestige to the career of social researchers in education. Researchers, like journals and publications, have closer ties to institutions than to groups of professional investigators or to specific fields of study.

The lack of professional, corporate, or union identity of educational researchers in Mexico also makes it difficult for them to maintain ties with the international scientific community. Many researchers are members of scientific societies in other countries or at the international level and participate in their meetings, but they do so as individuals, and this increases the likelihood of isolation and lack of permanency on the part of the members and the units themselves.

Structure of Educational Research

Conducting ER

Conducting ER in Mexico is not the responsibility of isolated individuals, such as in the United States, for example. Instead, it is conducted within

institutions by work teams that we have termed Education Research Units (ERU). The second thing to note here is that to some extent the National ER Congress is institutionalizing research in nine subject areas. This has the advantage of providing ER activities with a certain degree of uniformity and systemization, and the drawback of possibly dividing them into classifications that may neglect certain areas while stressing others.

Nature and Distribution of the Units

A unit can be defined as a group of persons, inside or outside an institution, that conducts ER or supports ER activities intentionally, regularly, and systematically over a given period. Five types of units can be distinguished.

Public sector units: Their basic function is to meet the needs of officials in charge of various areas of education. These units may belong to government secretariats, undersecretariats, state delegations, or decentralized agencies in this sector. The DGP-SEP 80 inventory indicates that in this sector there are 125 ER units, 948 investigators, and 123 projects completed from 1979 to 1980 and 370 in progress.

Higher education sector units: These units are normally found within universities or institutions for advanced learning, which is why they depend to a certain extent on the needs of these institutions and on the time available to conduct ER activities. In most cases, these units are found within planning agencies, centres for the training of academic staff, teaching centres, normal schools, and university faculties, schools, and departments. In general, as a result, the researchers do not carry out ER as a specific task, but rather do so as a function of their activities within the institution in question. The DGCE-SEP 74 inventory detected 30 units in this sector, 244 investigators, and 135 projects completed or under way in 1974. Five years later, the PNIIE-RIE 79 study, which does not offer complete coverage of the sector studied, detected 27 units, 529 investigators, and 118 projects under way and 101 completed. Although this does not represent all ER in this sector, these data still indicate significant activity, and, especially, a considerable increase in the number of researchers.

Private sector units: These units are much more heterogeneous in all aspects: size, age, and type of ER conducted. Therefore, we find units ranging from the CEE, which has 27 full-time researchers, to the Guanajuato Service Centre that has only two; units that are involved in studying all educational levels and units that are involved in a single level or certain concrete aspects of education; and units exclusively devoted to ER and those that divide their time between research and alternative education activities. In general, however, these units appear to be more involved in ER activities than those belonging to the other sectors. We also found units that conduct theoretical research, and others that prefer to conduct small applied research projects, involving community action or evaluation. In general, the units in this sector appear to be highly concerned with educational alternatives, rural education, informal education, community education, and education for marginal groups. Finally, it is important to note that the financial resources for these units are more limited than in other sectors, and they are less certain of obtaining financial support.

The 1974 DGCE-SEP inventory detected nine units in this sector, 97 investigators, and 30 projects under way and 18 completed. The 1979 PNIIE-RIE inventory detected 14 units, 207 investigators, and 19 projects

completed and 32 under way, which may indicate considerable growth in this sector.

Foreign sector units: The units in this sector were generally set up in cooperation with international agencies involved in education. Even though they provide various services at the international level, their location in Mexico has been beneficial for the development of the Mexican educational sector and research. However, in general, these units are devoted to very specific areas of ER, for example: health education, Centro Latinoamericano de Tecnología Educativa para la Salud (CLATES); adult education, Centro Regional de Educación de Adultos y Alfabetización Funcional para America Latina (CREFAL); and education techniques, Instituto Latinoamericano de la Comunicación Educativa (ILCE).

The 1974 inventory studied CLATES currently known as the Centro Universitario en Tecnología Educativa para la Salud (CEUTES), CREFAL, and ILCE. It detected a total of 38 investigators and 12 projects under way. The 1979 PNIIE–RIE project covered only CEUTES and CREFAL, and detected 26 investigators and 18 projects completed and 25 under way. If we compare the data for the units studied in both inventories, we find that in 1974 these units had fewer than half the investigators (11) than they had in 1979 and had only two projects under way. This demonstrates, once again, the large increase in the number of investigators over these years.

Documentation centre units: This includes those units that are basically devoted to documentary research, bibliographies, and statistics. There has been some discussion as to whether or not the work conducted by these centres should really be classified as ER or support activities. The 1974 inventory did not consider these units as a separate sector, but did include Adiestramiento Rápido de la Mano de Obra (ARMO) within the public sector, and the Asociación Nacional de Universidades e Institutos de Educación Superior (ANUIES) within the private sector. In our study, we have included these units as an additional ER sector. The 1979 PNIIE–RIE project detected four units in this sector: ANUIES, RIE, ARMO, and the Union de Universidades de America Latina (UDUAL). It detected 118 investigators and eight projects completed and 13 under way.

Educational research in Mexico, therefore, occurs in a series of specific contexts that are quite varied and the goals in each sector are quite different. Although the nature of the data available does not make it possible to compare the relative size of ER in each sector, if we look at ER activities as a whole, and above all if we view them from a historical perspective or compare them with countries whose economic development is the same or lower, we can state that these activities are quite important and involve a certain degree of dynamism.

Geographic Location of the Units

Geographically the units are strongly concentrated in the Federal District. Of the 61 units detected in PNIIE–RIE 79, 42 (69%) are located in the Federal District, and the remaining 19 (31%) are distributed throughout the country: five in Monterrey, three in Guadalajara, two in Morelia, two in Guanajuato, and one each in Aguascalientes, Cuernavaca, Chihuahua, Durango, Querétaro, Oaxaca, and Xalapa.

The 1980 DGP–SEP inventory confirms these figures because it shows that out of the 125 units that belong to the public sector, 78 (62.4%) are located in

the Federal District and 47 (37.6%) are scattered throughout the country.

There is no evidence to show that there has been any significant change in this situation. On the contrary, if we look at the data obtained in the 1974 DGCE–SEP inventory, which showed that out of 65 institutions, 43 (66.2%) were located in the Federal District and only 22 (33.8%) in other parts of the country, the above is confirmed. It is true that the concentration of units in the Federal District may strengthen the impact of these units, because of the ease of communications and cooperation, but it is also reasonable to suppose that ER requirements in the rest of the country are being neglected.

Internal Organization of the Units

Because the units are so different in nature we can also assume that their internal organization will be quite varied. Several factors contribute to this: the type and size of the institution, the way in which projects are financed, and the relative importance of ER activities in relation to the remaining activities conducted by the unit or institution. These factors can have an impact on organizational aspects such as whether or not the teams of investigators are permanent or temporary, their internal cohesion, as well as the rhythm, intensity, and basic goals of research activities. Several typical types of organization are listed below.

Government and university operational units: In these units ER is a support task for planning and administrative activities. The investigators may be career persons, assigned to a given study, but who do not necessarily have a vocation or specific training for ER. The teams are made up as a function of the requirements of each study, and the members may be engaged in ER for relatively short periods. It is not unusual, however, for several of the team members to remain interested in the topic studied, or in ER in general, and to afterward propose new studies. In general, these teams do not work under stringent budgetary pressures, but the short and inflexible time limits within which they must conduct their studies can have a determining influence on the group atmosphere and the quality of the work.

Units specifically organized to conduct ER: These units do not generally engage in any other activity aside from conducting ER and can be found in both the public and private sectors. In general, they are composed of small groups anxious to provide concrete solutions to the nation's educational problems, in increasingly specific situations and for clearly defined population groups. Because units belonging to the private sector do not have a secure source of funding, they have been forced to work on projects for the public sector, which determines and limits the subject matter and outlook of the studies at the same time as it generates strong pressure to improve study designs, administer financing, and meet deadlines, as well as making it necessary to maintain contacts to ensure that new projects will be approved and funding can be obtained.

Teaching and training units: Mainly set up around programs for MAs and Licentiates in education, these units seek to create a favourable environment for the training of new investigators, at the same time as they deal with certain specific problems, as is the case with CREFAL in adult education and the Centro Interdisciplinario de Investigación y Desarrollo en Educación Tecnológica (CIIDET) in technological education. Their ability to count on students as workers provides them with considerable resource potential, although there are drawbacks such as the students' timetables and the length of the school year, as well as their lack of experience.

ER Support Activities

ER in Mexico requires various types of support that act as determining factors and make it possible to conduct research and disseminate and implement the results. Standards and priorities, for example, are set by the agencies responsible for making compulsory regulations or putting out guidelines governing ER activities.

The main agencies responsible for coordinating ER policies in Mexico are: the Consejo Nacional Técnico de la Educación (CNTE), which, together with its Commission for Educational Research, is responsible for proposing guidelines and policies to standardize, evaluate, and support the ER conducted by the SEP (1981) through its various branches; the DGPL, which provides support activities for the planning and programing of the ER conducted by the various branches of the SEP; and the PNIIE, which is one of CONACYT's most important programs. The PNIIE is responsible for advising and guiding CONACYT, other government agencies, the scientific community, and the users of research results on educational problems, priority areas, policies for the training of human resources, etc.

One of the most important activities of PNIIE–CONACYT is the preparation of the master plan for ER. The importance of this plan lies in pointing out, based on a prior diagnosis, priority areas and programs for ER in Mexico. For its part, the DGPL has a unit that conducts studies on ER and supports planning and programing of ER in the public sector. At present, this unit is preparing an evaluation of the projects conducted by the sector and of the sector's capacity to generate ER.

Normative activities, therefore, affect ER in different ways, depending on the level under consideration. At the level of the scientific community, the task is merely to make suggestions, because investigators cannot be forced to adhere rigidly to certain norms. However, norms can be determined for CONACYT, DGPL, and CNTE, or for activities supported by these agencies.

ER activities also require funding so that a larger number of individuals can become involved. In this case, the PNIIE is also an agency that directly finances projects. In 1981, it granted 14.39 million pesos (as of 1983, P140 = U.S.$1.00) to finance 27 projects (new and under way) conducted by 15 different institutions. It obtains its funds from CONACYT, which, in turn, obtains them from the federal government and the Inter-American Development Bank (IDB).

Another financing agency is the Grupo de Estudios para el Financiamiento de la Educación (GEFE). The GEFE is a government interdepartmental group composed of the SEP, the Secretariat of Programming and Budget, and the Secretary of Finance and Public Credit. This group also obtains its funds from the federal government, and finances only those projects that support or provide information on education funding.

According to Vielle (1979), even for the special funding of projects contracted out, public-sector agencies receive their funds from a single source: the federal government. It is only at private centres and universities that there is some diversification in regard to sources of financing, but, even here, most projects are funded by public-sector agencies. The federal government, therefore, is totally or partially involved in funding almost all ER projects in Mexico, because the main financing agencies (SEP, PNIIE, and GEFE), in the final instance, obtain their funds from the public treasury.

Another type of support that has direct repercussions on the quality and quantity of ER conducted in Mexico involves facilities for the training of

personnel working on ER. However, the picture is not very promising. It is known, for example, that in 1981 CONACYT granted 50 scholarships in the field of education, which represented 5.72% of the total number of grants awarded to the remaining areas in the same year. Recently, several licentiate programs have been set up in education sciences and techniques, but only a very few of them are involved in training researchers. In regard to MAs in education, Ezpeleta and Sanchez (1979) identified 21 MA programs in this field, but in the 14 programs studied, only eight were aimed at training investigators, and only three contained these goals in their study plans.

Given the size of ER in Mexico and its rapid development, support and consulting activities are of vital importance. These activities should help to raise the quality of ER and the level of the individuals conducting it. Unfortunately, no program in this field has been implemented to date. It should be noted, however, that organizations such as the PNIIE and the RIE include among their objectives the implementation of programs to raise the professional level and quality of services offered by institutions involved in ER.

Finally, we should mention the activities of communications, dissemination and cooperation, that play a vital role in the process of ER, because if research results are not published and disseminated, the studies remain only in the hands of the investigators and do not reach the users, and they are not fed into the national education system. The importance of these activities has generated a number of studies for which a large amount of information has been collected, and a considerable amount of effort has been put into analyzing it.

Based on the activities already discussed, Mexico already has a basic support structure for ER. Some of the institutions that were created many years ago have been revitalized. Others are very new, but, together, they are already capable of maintaining an ongoing process of critical thought regarding ER, so that new agencies can be set up where necessary, in accordance with the development of ER in Mexico. Nevertheless, the lack of provisions to assist in raising the quality of ER is very evident.

Communications, Dissemination and Cooperation

The impact that research has on the educational system in Mexico is basically determined by the communications system that supports it, during both the research and the dissemination of its results. Vielle (1979) categorized the modes and channels of communications between producers and users of ER in Mexico.

Communications for ER Activities

This type of communication occurs during the very process of carrying out ER projects and can assist in improving the way in which they are conducted. The three most prevalent types of relationships that occur at this stage of ER are listed below.

Joint financing of projects: The latest studies show that this type of relationship is very rare. The institution responsible for funding most projects is the SEP.

The 1974 DGCE–SEP inventory shows that some financial cooperation, as a formal relationship, already existed at that time. Today conditions do not appear to have changed very much. All centres look to the SEP as their main source of funding, and communications among all centres in this regard are neither systematic nor extensive.

Conducting joint research: Based on DGCE–SEP 74, in the "Panorama of Research on Education Sciences and Techniques," Vielle (1974) found that about 35% of all cooperation among projects was in regard to conducting inter-institutional programs. The sectors that participated most in this kind of program were the public sector and decentralized agencies; they were followed by centres for advanced education.

At present, according to Latapi (1981) "there is no tradition of collaboration and the provision of services among units. Interinstitutional programs are real exceptions to the rule. Nevertheless, certain new steps aimed at overcoming this situation have been detected." Vielle (1981b) affirms the same thing. In his study on "Capacity and Impact of ER" (Vielle 1979) he finds that cooperative activities mainly occur between research centres and the institutions that belong to their "sphere of influence." He finds that joint preparation of projects among units is very rare: it does occur, for example, among the RTIs, and between the CEE and the UDEM. No other study has revealed additional cases of joint cooperation aside from those already mentioned.

Consulting on ER: The 1974 DGCE–SEP inventory revealed that 24% of total cooperation on projects had to do with consulting. According to this study, the sectors exhibiting most cooperation were the public sector and decentralized agencies. This study found that these relationships were even less prevalent than financial cooperation.

Vielle (1979) has found that, today, consulting relationships are more numerous than financial relationships. It would be risky to state that the opposite situation was true in 1974, because we must remember that the results of DGCE–SEP 74 are based on a study of only 21 out of the 65 units detected.

Vielle (1979) also finds that ER institutions tend to keep consulting relationships with institutions in their "sphere of influence," rather than with the remaining institutions involved in ER. He also affirms that it is premature to speak of a true "consulting system" among centres, and that the consultations that do exist occur mainly among units that are closely related geographically.

The conclusion, then, is that there is a lack of coordination in consulting among units and even between the units and their "users." Also, when consultations are held, they tend to be between centres that are closely related in a given aspect.

Dissemination of the Results of ER

This type of communication is very important if the results of ER are to be put to actual use. These relationships basically seek to achieve the following: make decision-makers aware of the results so that they can use them in reaching their decisions; bring researchers into contact with each other so that they can learn about the work that others are doing, and make use of it in their own studies, if possible; disseminate the results of ER so that they can be used as input into later research; and inform all users, including teachers, students, parents, school principals, etc., of the progress made by ER.

Events held by the centres: Vielle (1981b) points out that verbal communication of the results of ER at events (seminars, symposia, workshops, short courses, and conferences) occurs mainly between the centres and users. Vielle (1979), in his study on "Capacity and Impact of ER," found that "the sectors do not contribute equally to events, and said contribution does not correspond to the contribution they make to ER." For example, private centres make only a 9% contribution to the total number of events conducted, whereas their

production of ER is much higher, proportionally, than that of other sectors. He also finds that, inversely, the public and the foreign sectors make a total contribution to events (26% and 17%, respectively) that is higher than would be expected in comparison with their contribution to ER.

In the last 2 or 3 years, an important role has been played by the semiannual meetings of unit directors, as well as the meetings of documentary specialists, both organized by the PNIIE. The RIE also organizes monthly updating meetings on ER, as well as lectures on specific topics in the field of ER several times during the year. The main value of these kinds of meetings is that they are regular and ongoing.

Events involving ER centres and their users are far more frequent than events involving various centres. So ties still do not exist among all the units involved in ER, and the results obtained from ER are only partially used.

Exchange of documentation: By documentation we mean all those draft projects, progress reports, preliminary reports, conference documents, speeches, etc., that are prepared before publication in journals and books. DGCE–SEP 74 found that little was being done in terms of the exchange of documents, especially in centres belonging to the federal government and the foreign sectors. The report also noted the "lack of a permanent information system." The report, however, does not differentiate greatly among the number of libraries, publications, or, in general, all dissemination activities. Whatever they may be, however, it describes them as few and unsystematic.

More recently, Vielle (1979) has found that the exchange of documents is the most frequent dissemination activity conducted by the centres. These exchanges are more prevalent between centres and their users or institutions in their "sphere of influence," than between one unit and another. In addition, exchanges among units mainly involve units belonging to the same sector.

Vielle (1979) also stresses that, although the picture is more encouraging in this aspect, certain deficiencies continue to exist: only very few centres have good cataloguing systems that make it easy to recover information and eliminate outdated documents, and almost no effort is made to adequately publicize the contents of centre archives; the exchange of documents is based on final reports, omitting the plans of projects, documents on methods, documents used as input for the projects, partial progress reports, etc.; and the exchanges that do occur are only between the centre and its individual system, and centres belonging to other sectors do not learn about these documents.

Latapi (1981) points out that there is a lack of personnel with training in library and documentation sciences. The centres do not have sufficient funding to hire this type of staff. Also, researchers are not trained to take advantage of the documentary resources at their disposal, which are very limited (Latapi 1981).

One of the few advances in this area is the Documentation Centre recently created at the DGPL coming under the SEP. Its mandate is to classify and analyze not only documents containing the final results of research, but also progress reports, reports on methods, partial reports, etc., produced by the DGPL and by other units belonging to the public sector.

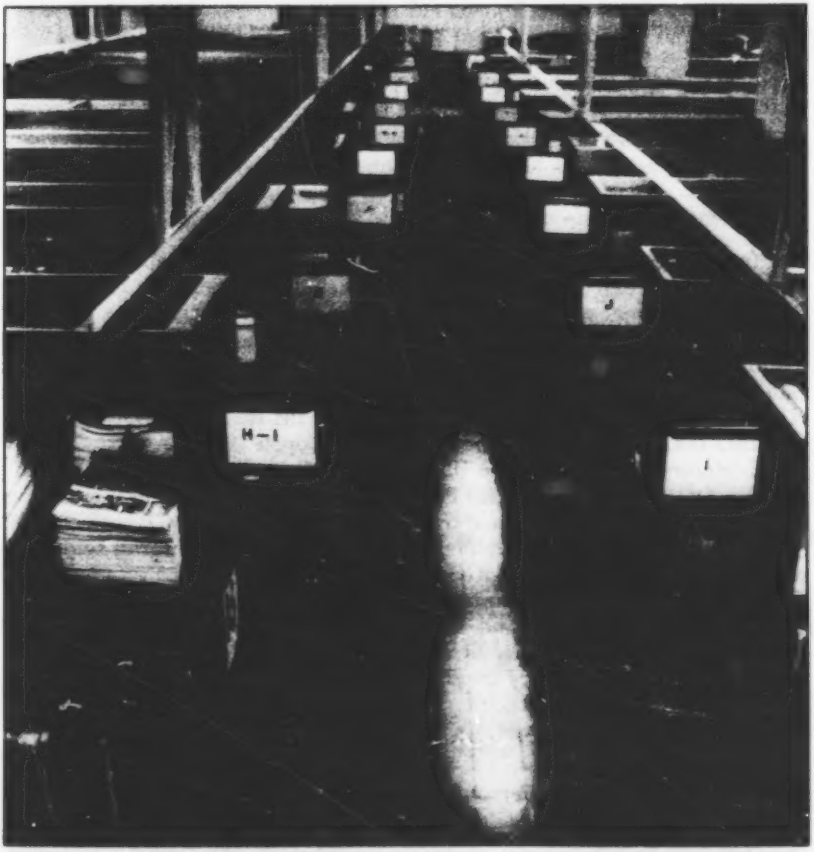
Latapi points out that documentary resources are concentrated in the Federal District. This, of course, makes access more difficult for provincial centres, although it must be recognized that it facilitates access for centres located in the Federal District, which are the large majority.

Obviously, there is a great deal of potential in dissemination via documentation. This is the most frequent activity reflecting the relationships that

exist between ER centres and their users, and among the ER centres themselves. However, once again, just as in the other types of relationships, the coordination required to set up a viable system for documentation exchange is lacking.

Publications: This category includes journals and books. DGCE–SEP 74, which stresses the lack of dissemination activities, mentions that at that time there were only three education journals in Mexico that could be classified as scientific: the journals put out by the CEE, ANUIES, and the Consejo Nacional Técnico de la Educación (CNTE). There were also certain publications put out by departments of the SEP. The same study mentions extensive publication of statistical data by the SEP and publication of several studies at some centres.

Journals have increased considerably since 1974. Many of them are for the general public but are not at the level of scientific publications. However, although new journals have been founded, some of the older ones have disappeared. Another difficulty is the lack of libraries, and their poor organization, compounded by the fact that the main libraries are in the Federal District, makes ER difficult in other parts of the country.



In Mexico's relatively rich environment for research, documentary resources are still largely concentrated in the Federal District of Mexico City.

Other documents: Another form of dissemination is represented by bulletins, periodical publications, pamphlets, directories, newsletters, etc. Vielle (1979) and Latapi (1981) note that the distribution of this type of document is also incomplete. Many documents of this type could be mentioned, but Vielle states that, although they are very useful in providing information on various aspects of ER, they generally reach only the major centres, and it is difficult to obtain them. However, this type of publication has not been studied in detail, and, therefore, additional information is needed.

Information is also lacking in another area of dissemination: the communication of advance reports on ER to all users, including potential users, and not just those who request this information or make decisions at high administrative levels. The dissemination of advance reports and the results of ER to teachers, those responsible for training teachers, parents, students, and school principals, and all those users of ER who are closely linked to practical education is virtually nonexistent and its importance is vital to ensure that ER is useful.

One of the few examples of the dissemination of results to teachers is the summaries of progress reports and the results of certain studies published by the DGPL in the newsletter "El Maestro." Another example of real links with users of ER is the Community Education Projects conducted by the Instituto Nacional de Educación para Adultos (INEA) of the SEP. These projects belong to the field of research–action, which, because of its very nature, is aimed at promoting this type of link.

ER Personnel

In the foregoing, we conducted a global study of ER by illustrating various aspects of it through data obtained at the national level. Next, the units within the different sectors will be reviewed including the personnel and the material and financial resources at their disposal. Several studies have provided information on personnel and resources involved in ER: "State of Research on Educational Techniques" by the Eighth Commission for the ER Congress, (Duran and Becerra 1981), "Diagnosis of ER in the RTIs" by CIIDET (Elias Martinez 1981), "Inventory of the FJBS 1980" (Topete 1981), the 1974 DGCE–SEP inventory (Vielle 1974), the 1979 PNIIE–RIE inventory (Vielle 1979), and the 1980 DGP–SEP inventory (SEP 1981), among others. Because these studies provide only partial coverage and overlap, as mentioned earlier, it has not been possible to compare all the data they contain. Again, the inventories used most were DGCE–SEP 74, PNIIE–RIE 79, and DGP–SEP 80.

An ER unit comes into existence when a group of individuals conduct ER activities in an organized and ongoing fashion. Therefore, the personnel belonging to these units is their most important resource. To describe and study ER personnel it is necessary to look at the following aspects: the types and number of staff making up each unit and the characteristics and availability of investigators who are responsible for producing ER.

Numbers and Types of Personnel

The personnel working in the units can be divided into the following types: investigators, administrative staff (accountants, secretaries, accounting assistants, etc.), technical personnel (surveyers, coders, proofreaders, etc.),

Table 1. Average number of staff per unit in each sector.

Sector	Research personnel				
	Research	Administration	Technical	Specialized	ER units
Public sector	32.7	17.9	12.5	1.1	14
Higher education	11.5	4.9	3.6	0.8	37
Private centres	8.1	2.8	3.3	0.6	14
Foreign sector	8.5	42.0	18.0	3.5	2
Documentation sector	9.8	8.8	8.3	3.0	4
General average	15.3	8.0	6.1	1.9	61

Source: PNIIE-RIE 79 (Vielle 1979).

and specialized personnel (librarians, documentation specialists, and archivists).

The 1974 DGCE–SEP inventory detected an average per unit of 11 investigators, nine individuals involved in administration, and eight technicians. The data contained in DGCE–SEP 74 show that investigators represented 40% of the total staff working on ER. According to these data, more individuals were employed in support than in research. However, the "Panorama of Research on Education Sciences and Techniques" (Vielle 1974), based on 21 centres detected in DGCE–SEP 74, states that at that time there was no clear division between research and technical staff. Therefore, the data may be affected by confusion over the difference between one type of personnel and the other. Table 1 shows the average number of staff per unit in each sector based on the 1979 PNIIE–RIE inventory.

The size of the ER units varies according to the sector. They can be divided into three categories:[2] public sector units, made up of an average of 64 persons; documentation centre units, made up of an average of 30 persons; and units in the advanced education sector and private centres, composed of from 13 to 20 persons.

Whether or not the human resources working in the units are sufficient in number is difficult to determine. Averages are not very useful in discovering what the required number of staff for ER projects might be, but they do give an idea of the size of the units. What is clear is that the problem is less a lack of personnel than the fact that staff are quite unevenly distributed among the units.

Characteristics of the Researchers

Information on the characteristics of the investigators is more important than knowing the number of staff of different types in each unit, because the quality of ER produced depends more directly on this aspect. Shaeffer assigns a great deal of importance to this in his model, for the same reason.

It has already been stated that one of these characteristics is the amount of training possessed by the investigators. This can be measured by the highest academic degree they have obtained, and through their experience in ER (among other indicators), on the assumption that the higher they both are, the better the investigator will be able to conduct high-quality ER activities.

Of the total number of investigators detected in the 1974 inventory, 50% had completed professional studies at the licentiate level or higher. The other

[2]The foreign sector was eliminated because in the sample of two units (CREFAL and CLATES) one reported 60 persons working in administration and the other 24. It may be that when they answered the questionnaire they included all the institution's administrative personnel and not just the staff working on ER.

50% had not completed the licentiate or a postgraduate degree, or had not studied at a professional level.

Figure 2, derived from DGP-SEP 80, shows the distribution of researchers in the public sector according to their professional training. This study shows the same pyramidal distribution that is seen in the other studies and contains information on the years of experience of ER researchers in the public sector.

Figure 3 shows that a fairly high percentage (25%) of public service employees have more than 4 years of working experience. However, they are not in the majority. The percentage of personnel that has from 1 to 2 years of working experience is also high. The percentage of staff that has less than 1 year of working experience is not far from the other two. In short, most of the researchers have less than 4 years of experience working in ER.

Whether or not the number of well-trained researchers is sufficient, there are units with many investigators who have low academic levels and few or no researchers who have completed postgraduate studies. It must be stressed that the number of researchers with specialization in education is very low, and this is probably because this academic degree is rare in Mexico. In regard to the researchers' working experience, the public sector has a high percentage of investigators with more than 2 years experience, but data is lacking for the remaining sectors.

After having studied the academic background and experience of the investigators, it would be logical to continue with a study of their abilities, defined as those research skills that have a strong influence on the quality of

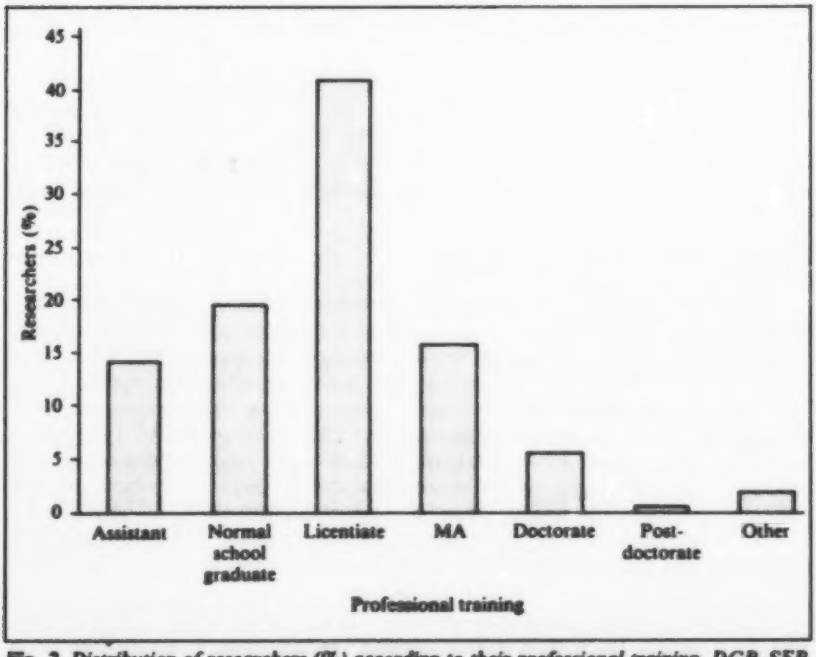


Fig. 2. Distribution of researchers (%) according to their professional training, DGP-SEP 80 (SEP 1981).

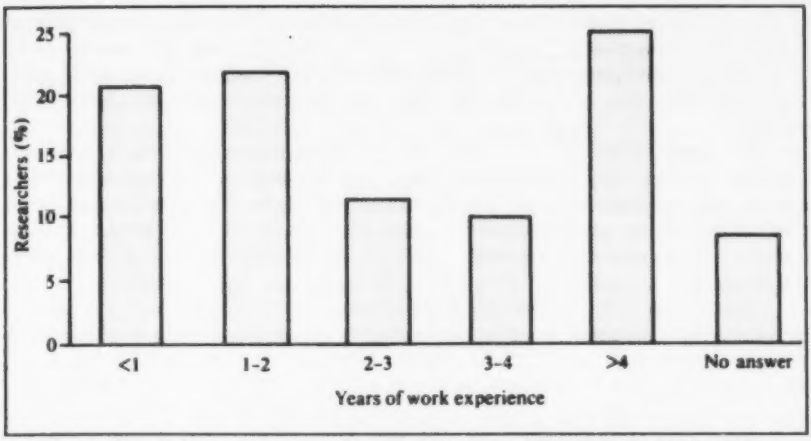


Fig. 3. Researchers' (%) years of work experience. DGP–SEP 80 (SEP 1981).

the ER work they produce but are not acquired through training. The very nature of ER is so varied that it requires researchers with the ability to detect relevant problems, to persevere in the process of accumulating data, to involve both researchers and users, to ensure that innovations are actually implemented, and to work systematically. Motivation is another characteristic of researchers that has scarcely been explored, if at all. Very sophisticated instruments would be required to measure these qualities and, up to now, no study on ER has taken this approach.

The main conclusions that can be drawn from this section on personnel are that although the average number of investigators and support personnel appears to be adequate, it is not possible to affirm that the quantity of personnel is satisfactory and that each unit has sufficient numbers of staff, because the distribution of the staff is unequal. The same applies to researchers' training. If the distribution of personnel according to training is unequal, perhaps it will be necessary to initiate activities involving consulting and training for researchers. The best conclusion is that it will be necessary to conduct studies on these aspects so that we can obtain the necessary conclusions.

ER Resources

Material Resources

Material resources are defined as all those physical materials and instruments that facilitate the activities of the personnel working on ER, such as buildings, equipment and furnishings, computers, archives, data banks, information banks, etc. There is no information available regarding the buildings in which ER is conducted, nor on equipment.

There is another type of material resource, however, on which some information is available. The "Panorama of Research on Education Sciences and Techniques," based on DGCE–SEP 74 (Vielle 74), contains information on libraries. They are an important material resource, because the information contained in catalogued books is indispensable for ER. In the study "one-third

of the 21 centres included did not have a specialized library, and had to use outside libraries, even though these were often located in the same institution." Five centres (24%) had very small libraries of their own (with fewer than 2500 volumes). Only two centres (9.5%) had libraries containing more than 10 000 volumes.

The 1979 PNIIE–RIE inventory showed that the sectors with the fewest libraries of their own are the government and higher-education sectors, which are the sectors in which most ER is conducted. However, it is possible that these percentages show proportionately fewer libraries in the remaining sectors because of the size of the sample; 43% of the libraries had fewer than 2500 volumes, 30% had 2500–10 000, and 27% had more than 10 000.

There is another type of material resource for which, just as in the case of buildings and furnishings, no data whatsoever exist. These resources are computers and copying machines. Vielle (1981b) states that nothing is known about the computing capacity of ER units. We assume, however, that there is always the possibility of using a computer in the same institution or one belonging to a private company. In any case, Mexico has ample capacity throughout the whole country, and the same situation must apply to copying.

Financial Resources

It is very difficult to calculate data on the amount of money handled by the units. Several studies have calculated the total amount of money spent on ER, but, first, we must determine how total spending is distributed per sector.

The first study containing useful data is the "Panorama of Research on Education Sciences and Techniques" of 1974 (Vielle 1974). It uses two sources to estimate expenditures on ER: CONACYT and the sample of 21 centres taken by the DGCE–SEP 74 inventory. The first gave a figure of P32 million spent exclusively on ER, and the second source estimated expenditures at P37 million. CONACYT also found that 78% of this outlay was exclusively for wages and salaries. There is no similar breakdown for the 21 centres. Both sources found that expenditures were proportionally similar in the different sectors.

In 1974, total spending on ER (about P35 million) represented 1/1000 of total spending on education in Mexico. At present, it is estimated that spending on ER is about P2000 million/year (Latapi 1981), but this continues to be only 1/1000 of annual federal spending on education. Vielle (1974) found that most funding for the centres came from resources obtained by institutions whose main source was the federal government. It would appear that this has not changed up to now. At present, the main sources of funding, according to Latapi (1981) are the following: the SEP, which in 1980 spent P1000 million on ER supporting both internal and external projects; the GEFE, which spends approximately P100 million/year on ER; and the PNIIE, which spends approximately P12 million/year on ER.

In regard to the data contained in the 1980 inventory, Latapi affirms that "from 1979 to 1981 there is a trend towards more costly projects, which, perhaps, cannot be completely explained by inflation." If true, this means there has been an increase in the amount of financial resources available for ER, at least in the public sector. The 1980 inventory showed that most of the projects in the public sector either cost less than P50 000, or from P1 to P5 million. The fact that such a large number of projects cost more than P1 million is worth noting.

For a complete analysis, it would be necessary to know the costs of projects

in all sectors to complete our information at the national level. It is logical to assume that if no information is available on this aspect, there will be no information on the way spending is broken down per unit, i.e., how each unit allocates its budget for each aspect of the ER activities it conducts, such as, wages and salaries, travel and living allowances, stationery, materials, and equipment, etc. Other information required to complete the analysis would refer to the type of financing, which is not known either. For this, we would require information indicating whether funds are acquired through subsidies, loans, payment of services, or simply as a budget allocation from the institutions to which the units belong.

All the information discussed, and perhaps additional information on financial resources, would be very valuable material for the decision-making process, but as has been mentioned, it is very difficult to collect data on this aspect.

Summary

The nature of ER capacity in Mexico has been defined to identify the factors that determine its evolution with a view to proposing guidelines to promote its development in accordance with the nation's educational requirements. To achieve maximum objectivity, and because it was impossible to collect data directly from ER researchers, we used national inventories dating back to 1974. For our study, we made use of a model (Shaeffer 1979) for analyzing ER capacity in developing countries, to which several changes were made to adapt it to Mexican reality. In particular, we replaced the concept of research as the "product of knowledge" with an idea that takes into account the impact of research on changes in education.

Research is conducted in very different sectors, but almost always depends on the resources, demands, availability, and orientation of the official education apparatus, or is linked to planning requirements and the need for institutional change, such as is the case with a large part of ER conducted in universities. Nevertheless, ER appears to be entering into a stage of greater maturity as a series of policies for research rationalization, optimization, and ties begin to bear fruit, and as education researchers develop a greater group awareness and become better organized.

Educational research in Mexico is conducted within units belonging to five different sectors, each of which is briefly described in regard to size and the orientation it prefers. The public sector appears to be the area in which studies are most likely to have practical results, above all in setting education policies, but it is also the area in which ER may suffer from a certain degree of improvization, a lack of long-range continuity and insufficient dissemination. Our study shows that most ER units are located in the Federal District with the result that there are far fewer activities in the rest of the country. Within ER units, we have distinguished three types of group and describe their nature, advantages, and weaknesses. The ER support function is described from the view of norms and financing, the training of research staff, and the use of consulting to facilitate the research.

A suitable number of libraries appear to exist within easy access, but it is very difficult to judge on the basis of existing data whether their holdings are sufficient and up to date, and whether they respond to research requirements.

There are very few documentation centres, and publications appear to be inadequate and insufficient.

Information on financial resources is particularly scarce and fragmentary. The few data that we have worked with here indicate that expenditures on ER in 1980 are at the same low levels as in 1974 if we compare them to overall spending on education, although the money available has grown significantly because of increased spending on education. The federal government is almost the only source of ER funding, either through direct channels or indirectly through subsidies to public universities that conduct ER with funding from their own budgets. As a result, the data show that most spending on ER is in public-sector institutions, followed by advanced education institutions.

Conclusions and Recommendations

Conclusions

Size

Although sufficiently reliable figures are available only for the public sector, there is evidence to show that ER capacity in Mexico has developed beyond the stage of infancy, because of foreign aid, promotion of ER by the authorities, and the decided action of certain individuals with a special vision of the social role of ER. Today, ER is now capable of self-development, self-regulation, and even of obtaining the required financing, provided it is able to demonstrate the validity and relevance of its results for practical education.

Maturity

Although ER activities have been conducted for some time now, most ER capacity has been acquired relatively recently, with the exception of a few institutions that stand out for their experience and the number of studies they have conducted. Therefore, it is still too early to look for the generalized individual experience and institutional traditions that will accompany ER as it grows to greater maturity.

Orientation

Although institutions and individuals from several sectors and states are involved in ER, its capacity is strongly determined by the support of the central government, both from the viewpoint of funding and from the viewpoint of carrying out ER. In effect, a major part of ER is carried out in government offices by public servants and is aimed at solving problems linked to the running of the education sector, and although some research is done outside the government it also responds to the same demand.

Distribution

With the exception of a small nucleus of older institutions, ER capacity is distributed to a considerable degree among sectors that are quite different in size and interests and that have a fairly large number of recently created institutions of different types. There is little coordination among these institutions, and their goals are quite individualized. This dispersal is accentuated by the way in which ER is financed, with support going to projects that are isolated from each other. Although little information is available on the research programs of these institutions, the evidence available indicates that, with a few

exceptions, the norm is to consider isolated projects. The same is true for funding agencies, with the exception of GEFE and, up to a point, the PNIIE. However, information on this aspect is fragmentary and probably insufficient, which is why this conclusion is drawn tentatively.

Ties

In principle, the fact that most ER is conducted within public-sector institutions or under contract to them ensures the short-term impact of research results. However, this advantage tends to disappear over the long term because this dependency tends to limit research to immediate goals, weakens ties among the researchers themselves because of the importance of their relations with their source of financing, minimizes theoretical development, and hampers the free and broad dissemination of research results.

Personnel

The Mexican licentiate degree offers little training in investigation, and education students have little opportunity to engage in research. Therefore, it is likely that most investigators have not been fully trained. This can be partially overcome by teams set up around individuals with postgraduate training. In the public sector, this situation may be aggravated if there is a lack of continuity in ER activities because of changes in staff and the interruptions caused by the need to engage in other more operational activities at the same time.

Resources

In general, equipment and funding appear to be in line with the requirements of the research being conducted in institutions. Funding, however, is fairly uncertain because, in the case of institutions in certain sectors, it is linked to the approval of individual projects.

Therefore, although ER capacity has achieved a notable quantitative growth, greater coordination will be required if the quality of investigation is to be improved and its results are to have greater impact. This is mainly because of certain insufficiencies in capacity caused by the way in which ER has developed recently and that may stand in the way of qualitative improvement.

Recommendations

Without overlooking quantitative aspects, these recommendations are aimed at improving quality and increasing the impact of ER capacity in Mexico:

- Maintain and increase quantitative achievements in developing ER capacity.
- Focus ER on priority subjects. For this: (a) create ER programs in each of the priority subjects, with sufficient funding; (b) arrange to have these programs conducted by capable and interested institutions, with a view to creating traditions and a certain degree of specialization; and (c) promote continuity in ER and ensure that the best researchers will remain in the field.
- Improve the level of training of research personnel in the following ways: (a) continue to support postgraduate studies in education; (b) increase on-the-job training for those currently engaged in research; (c) promote the development of investigation by offering practical training as part of the licentiate programs in social sciences and especially in education; and (d) encourage students of education and teacher training students at the upper

intermediate and advanced levels to study Mexican educational realities in greater depth.

- Improve internal and external ER ties by: (a) maintaining and improving ties with decision-makers; (b) seeking ways to encourage educational agents (teachers, parents, students, etc.) to participate in ER and to use its results; and (c) seeking to open channels of communication and cooperation among investigators.
- Speed up dissemination and handling of the information produced by ER by: (a) improving the information system and documentation handling, avoiding unnecessary duplication, coordinating initiatives and activities, and filling in existing gaps; and (b) systematically placing the results of public sector ER in the hands of investigators.
- Support theoretical research that can act as a foundation for more practical and applied ER studies.
- Continue to study specific topics on ER capacity on which information is lacking, such as: characteristics of researchers in the different sectors, above all in the public sector; and mechanisms that generate and orient the demand for ER.
- Revise the model employed in this study to make it more useful for evaluating and developing the ER most required in Mexico. In particular, more importance should be attached to participant forms of action–research, especially in schools responsible for training teachers and professional educators. This assumes that the concept of research as an activity that is conducted before and determines the educational process must be abandoned in favour of a more comprehensive view in which research is conceived of as the process of change itself that is generated and occurs during the educational process. In this way, education would cease to be the mere transmission of knowledge and become a process of searching for and verifying knowledge.

The Division of Education Sciences of the University of Monterrey thanks the National Program for the Advancement of Educational Research for the confidence it exhibited in the Division by entrusting it with the preparation of this project. Several persons assisted the authors by providing information on this subject. From the beginning, Dr Jean-Pierre Vielle acted as group consultant. Dr Pablo Latapi, Leticia Calzada, and José Angel Pescador made valuable comments on the original version of this study.

This work was conducted under the direction of Dr José Luis Quintero Hernández. He prepared the section on the social environment of educational research in Mexico and the summary, conclusions, and recommendations. Carmen Tamez Muñoz, also took part as project coordinator, and was responsible for writing portions of the section on the structure of educational research. Ana María Garza Villarreal, should also be mentioned and thanked for her cooperation in investigating different aspects of the project.

Appendix

Model for the Analysis of ER Capacity in Mexico

General Definitions

- *Research unit:* A group, inside or outside an institution, that conducts ER activities or ER support activities deliberately, repeatedly, and systematically over a given period.

- *Project proposal:* Formal plan describing the unit of ER activity to be conducted, which usually specifies the reason why it is to be done, objectives and goals, methods to achieve these objectives, required budget, and the number of persons who will participate.
- *Project:* A unit to organize and implement a process of an ER activity that pursues specific goals and can rely on specific resources.

Social Environment

- Refers to the social, political, and cultural context within which ER is conducted in the country and that affects the nature, development, and impact of ER.

Variables

Socioeconomic characteristics:

Indicators: (a) Openness to change and critical analysis is related to a nation's culture and historical, political, and intellectual experience. Openness to change and critical analysis facilitates implementation of ER results. (b) Existence of a tradition of research as a socially important process refers to a set of attitudes that favours a systematic and objective search for the truth. Learning methods, ideological approaches, and standards will be determined by the native culture and colonial and postindependence periods of the nation. (c) The type of government and decision-making in the country is important because in the extent to which a government is authoritarian it will omit the process of research before decision-making, whereas in a participative government, research is essential for decision-making. (d) Willingness to exchange information between public servants and researchers, belonging either to the public or the private sectors, and ease and frequency with which information is exchanged between these two groups will influence the climate, quality, and impact of the research conducted.

Characteristics of education:

Indicators: (a) The degree to which education is developed in the country is a characteristic of education that should take into account the quality of education and its coverage in space and time (intergenerational differences), pointing out those educational levels and areas of the country that are most developed in these aspects. (b) The value attached to education by the citizens and the government is also included insofar as it contributes to individual mobility and national development. (c) The place occupied by education in the nation's priorities is another characteristic that compares spending on education with spending in other sectors.

Characteristics of the scientific community:

Indicators: (a) Interaction with other sectors of society and other fields of study and investigation creates a climate in which there is a close relationship between educators and social scientists and produces higher-quality research than from within a climate of hostility or competition. (b) Ties with the international scientific community can lead to improvements in research in countries that are more closed and isolated. (c) The degree to which ER is developed in comparison with the rest of scientific research includes the role played by ER as part of scientific research in general, comparing contributions, achievements, and limitations. This description should be made by individuals who know and can analyze both the historical development of the country and the current situation of education in general and of ER in Mexico.

Characteristics of the demand for ER:

Indicators: (a) The type of ER required must be determined in terms of whether the research conducted is still quantitative or is now concerned with improving the quality of education. Whether the demand originates from decision-making agents, investigators, or agents involved in the educational process must also be described. (b) Nonmaterial research incentives will influence the motivation shown by investigators toward ER. These incentives might include recognition by colleagues, professional promotion, or the practical application of research results.

Organization of ER Throughout the Country

• Refers to the way in which ER is distributed throughout Mexico and the elements that compose it.

Variables

Distribution of ER: Refers to how ER projects are distributed throughout each sector, depending on whether or not they are of benefit to the different levels of the education system or different population groups.

Indicators: (a) Number of ER units and projects in each sector, (b) type of ER conducted in each sector (planning, action, interdisciplinary, documentation, or research on research), (c) number of projects aimed at each level of the education system by sector, (d) number of projects that have an impact on each level of the education system, by sector, and (e) number of projects benefiting each population sector.

Structure of ER: Composed of the series of elements that determine, enhance, or regulate ER activities in the country.

Indicators: (a) Regulatory elements include the description of agencies responsible for regulating ER activities through optional or compulsory guidelines and the regulations they issue; for example, DGP–SEP and CNTE. (b) Support elements refer to the description of programs or agencies that seek to raise the professional level and quality of the services provided by ER units, for example, PNIIE, consulting centres, etc. (c) Communications, dissemination, and ties refer to the description of agencies, programs, and agreements that promote and support communications among researchers, recording and disseminating ER results, and cooperation between ER and the national education system and joint research involving various sectors or units; for example, RIE, National ER Congress, ER Directors' Meetings, etc. (d) ER personnel training refers to the description of agencies, programs, and agreements that promote, support, and carry out specific training of personnel involved in ER. (e) Financing refers to the description of those agencies that finance ER, mechanisms for control and evaluation, and funding allocation policies. (f) Infrastructure refers to the description of libraries, documentation and information centres, publishing houses, and computer centres that support ER activities.

Internal Organization of ER Units

• The way in which the parts of an ER unit are organized.

Variables

Global data: The importance of the ER unit will be measured through indicators of the size and length of time the units have been in existence.

Size indicators: (a) Number of full-time investigators, (b) number of projects completed by the ER unit over a given time, and (c) amount of money handled by the ER unit over a given period.

Duration indicators: (a) Date the ER unit was founded and (b) permanency (history or evolution of ER unit).

Location of the ER unit indicators: (a) Geographically in the country and (b) structurally in the ER system.

Number and adequacy of human resources: Refers to the required number and combination of human resources in an ER unit that will permit it to function as efficiently as possible.

Indicators: (a) Total number of full-time researchers per project, (b) proportion of time devoted to ER in comparison with the total work time of the researcher, (c) average of the longest continual work periods spent by researchers on ER per week, (d) distribution of human resources by work categories and levels of training (%), (e) average seniority of the researchers, (f) relationships with ER human resource training institutions (it is suggested that the following scale be used: the unit forms part of a training centre

for education researchers, a different type of centre to train scientific researchers, a teacher training centre, has institutional ties with a training centre for education researchers, has institutional relations with other types of training centres for scientific researchers, has institutional ties with a human resources training centre, has institutional ties with a teacher training program, and the unit does not form part of or have institutional ties with centres of this kind), and (g) number of researchers in the ER unit who have completed their doctoral thesis.

Infrastructure and administrative support: Refers to the existence of an institution, either within or outside the ER unit, that carries out routine administrative activities relieving the researchers of these tasks.

Indicators: Do the researchers conduct routine administrative activities?

Work system and environment: Involves both the work methods of the ER unit in general, and the methods employed by work teams within the unit, as well as the types of interpersonal relationships among unit members.

Indicators: (a) Existence of a system to evaluate the projects conducted by the ER unit and its nature, (b) existence of documents setting out norms for ER unit activities, (c) participation of different kinds of researchers in the different project stages, (d) number of projects completed in comparison with the number of projects begun by the unit over a given period, and (e) degree of satisfaction with the work environment of all members of the ER unit (it is suggested that a test be used to measure this indicator.)

Links to education research: Refers to the extent to which the ER unit is linked to the education system and to the ER community in general.

Indicators: (a) Age of the ER unit; (b) number of publications by the ER unit staff since they joined the unit: in scientific journals (any area), in ER journals or books, in mass communications media (newspapers, bulletins, and pamphlets), in working documents, and in textbooks; (c) existence of an agency or individual responsible for the systematic distribution of the results of ER; (d) number of projects in which the users of ER participated; (e) number of persons in the unit who belong to ER coordination bodies at the national level; and (f) number of projects that have resulted in publications in national or international journals or in theses.

Personnel Involved in ER

• Includes all the staff involved in one way or another in the research process and who belong to an ER unit or cooperate with it as employees.

Variables

Type: Refers to the different types of personnel involved in the ER process.

Investigators: Those individuals who carry out the ER process, participating in the series of activities involved.

Indicators: (a) Number of researchers in each ER unit and (b) number of researchers working on each project.

Support staff: Those individuals who participate in some concrete aspect of the ER process because of their specialized knowledge and skills, but not including those who do so as part of their duties in other departments outside the ER unit. Examples of specialized staff include librarians, programmers, analysts, documentation specialists, and archive specialists.

Indicators: (a) Number of specialized staff in each ER unit and (b) number of specialized staff working on each project.

Technical staff: Those persons who take part in the ER process, after training or professional development, to carry out an activity within that process; for example, surveyors and coders.

Indicators: (a) Number of technical staff in each ER unit and (b) number of technical staff working on each project.

Administrative personnel: Those individuals responsible for the administrative activities required for the research process, if they belong to the ER unit; for example, secretaries, accountants, and messengers.

Indicators: (a) Number of administrative staff in each ER unit and (b) number of administrative staff working on each project.

Type of affiliation with the unit: Refers to the extent to which individuals are affiliated with the ER unit.

Unit members: Individuals hired by the unit who work for it full time while their contracts are in force.

Indicators: Number of investigators who are members of the ER unit.

Contributors: Those persons hired by the unit as staff to carry out specific duties that do not require complete integration into the unit's working group.

Indicators: Number of contributing researchers.

Individuals seconded to the unit: Persons who belong to another work unit and have been seconded to the ER unit to form part of it or to contribute to it for a given period or a given activity.

Indicators: Number of investigators seconded to the ER unit.

Characteristics of the researchers: Refers to the researchers' knowledge, attitudes, and skills that permit them to adequately conduct ER activities.

Aptitude for ER: A series of personality traits that contribute to the different stages of ER, such as the ability to detect relevant problems, capacity to persevere in the process of accumulating data, ability to involve both the investigators and the users, ability to ensure that innovations are implemented, and the ability to work systematically. Because it is impossible to include an instrument for direct measurement of this variable, we propose indicators that will measure it indirectly.

Indicators: (a) Number of publications printed and where, (b) number of projects directed, (c) special honours received, (d) projects directed that have been implemented, (e) projects that the individual has directed in which persons who will later make use of the results have participated, and (f) number of projects that the individual has coordinated.

Training: This refers to the training acquired by the researcher through studies, practical experience, or professional activities, and is determined, to a large extent, by the type and number of courses taken at educational institutions and by the number of years of experience.

Indicators: (a) Highest academic degree obtained by the investigator, (b) researcher's area(s) of professional training at each academic level, (c) place at which the investigator was trained, (d) years of experience in work related to education, (e) years of experience working on ER, (f) number of courses taken in research methods (indicating the number of courses that were taken before employment and during employment), (g) number of statistics courses taken by the researcher (indicating the number of courses taken before employment and during employment), (h) doctoral thesis completed, (i) number of projects in which the researcher has been responsible for designing the plan, (j) number of projects in which the researcher has been responsible for writing the report, (k) number of times the researcher has evaluated research projects, and (l) number of projects completed.

Motivation: Refers to the attitudes of the researchers toward ER and the reasons why they prefer to work on ER instead of another type of activity. It is suggested that tests used in other areas of social sciences be administered, which include the following indicators:

Indicators: (a) Reasons why they began working on ER, (b) degree of identification with ER, and (c) degree of job satisfaction.

Availability: This is the amount of time spent by the unit staff working on ER.

Indicators: (a) Hours: full time, half time, by the hour; (b) longest continuous

working period spent on ER per day; (c) works exclusively in the ER unit or also has other duties; and (d) proportion of time spent on each type of activity conducted by the researcher, such as education research, teaching, operations in the institution, administrative activities, own activities (private office), and others (specify).

Financing

- Refers to the funds available for research activities.

Variables

Quantity: Refers to the amount of funds allocated to ER activities.

Indicators: (a) Budget allocated for each ER project and (b) budget allocated to each ER unit in absolute figures and the percentage it represents of the institution's total budget.

Origin: Refers to the institutions or individuals that provide the funds used to finance research.

Indicator: Financing institutions for each project indicating the items financed.

Type: The conditions under which the funds are provided: subsidies, loans, payments, or allocations budgeted by the institution conducting the project.

Indicator: Proportion of funds allocated to each project in the form of subsidies, loans, payment of services, and budgetary allocations.

Destination: Specifies the way in which the funds for a research project are distributed by item.

Indicator: Breakdown of the budget for each ER unit by rent, equipment and materials, personnel costs, building maintenance, printing and publications, amortization costs, salaries and social security contributions per personnel category, and supplies.

Material Resources

- Refers to all physical means or instruments that facilitate the activities of personnel working on ER.

Variables

Type class: Refers to the different types of material resources that assist a researcher in conducting a study.

Premises: Specific locale equipped with the installations required to conduct ER.

Indicators: (a) Size of the premises in square metres and (b) specially constructed or adapted for the unit.

Equipment and furnishings: Includes a series of elements that facilitate work, ranging from ordinary office equipment to sophisticated apparatus such as videotapes, microfilms, etc. Also includes office furnishings.

Indicators: Total value at current prices of the ER unit's equipment and furnishings and of rented equipment.

Library: Specific place where books, journals, and publications are kept and where one can go to obtain information.

Indicators: (a) Owned by or belongs to the institution, (b) access to other libraries (number), (c) number of volumes in the field of social sciences, and (d) number of periodical publications in these fields.

Documentation: All available bibliographic materials that can be used for ER, such as written documents, research plans, partial progress reports, conferences, lectures, and information bulletins and leaflets that have been systematically collected.

Indicator: Number of documents in the fields of social sciences and education.

Data bank: A set of data that record information on concrete populations.

Indicators: (a) The number of data groups that makes up the bank and (b) access to data banks (number).

Data bank systems: System allowing access to information stored in several different data banks.

Indicators: (a) Information system to which access is available and (b) number of projects in which an information system has been used.

Computer. Equipment that permits large amounts of information to be processed very efficiently.

Indicators: (a) Manufacturer and model of the computer and (b) byte capacity.

Ownership: Refers to whether the material resources available to an ER unit belong to the unit or not and the conditions or terms under which they are being used.

Indicators: Form of access to the different types of material resources: belonging to the unit, belonging to the institution, on loan, rented, shared time, and with the right to use (library, documentation centre, data bank, and computer).

Availability: Refers to the ability to use the resources within the unit itself, as well as the ability to place equipment, materials, and installations at the disposal of other ER units for their use.

Indicators: (a) Extent to which the unit has exclusive use of the different types of material resources: used exclusively by the unit and shared with other ER units (stating the percentage of shared time), (b) available to other ER units (covers only libraries, data banks, informations systems, computers, and documentation), (c) type of agreement under which each resource is made available, and (d) number of ER units that make use of resources belonging to the unit.

Research Environment in the English-Speaking Caribbean

This paper deals specifically with the English-speaking Caribbean (Jamaica, Trinidad and Tobago, Barbados, Guyana, the Bahamas, Grenada, St Lucia, Belize, Dominica, Antigua, St Kitts–Nevis, St Vincent, and Montserrat — the last three groups of islands are still British colonies). The author contends that in most of the Caribbean, probably with the exception of Guyana, there is freedom of expression and of inquiry. There are no overt or covert means used to prevent or inhibit any kind of research. But in places like Guyana where the climate is more repressive, there is now a polarization of researchers into two camps: there are those who concentrate on what Miller calls safe or neutral research that will not offend the sensitivities of the authorities, the majority, and those whosé work is policy oriented and tries to challenge different governments' positions in development efforts, a very small minority.

The author analyzes the whole sociocultural context within which research is embedded in the Caribbean by dividing up the social condition there into "colonial" and "cultural" dimensions. He then dichotomizes these further into traditional, progressive, and nationalistic "modes." He considers a "mix of all modes" as possible but little can be said about the nature of such a mix because the sociocultural situation in the Caribbean "is very fluid."

The author contends that one factor that specifically militates against the conduct of critical research in the region is the sociocultural dimension of what he calls the "intimacy" of the Caribbean communities. By this he means that the peoples have a similar historical heritage, a common language, and a basic "core culture." By extension, the research community, educational practitioners, technical advisers, and others are from the same social groupings and as a result are well known to each other. Because of this so-called intimacy, research, especially into controversial policy questions, is wrought with difficulties. This is not occasioned by legal or official censure but by fear of losing personal friendships or of endangering relationships. This is particularly true in the smaller islands.

Another factor influencing the climate for research in the Caribbean, is the implicit assumption that conventional wisdom and common sense are more informed than research is on the paths change should take in the Caribbean. This again, the author contends, is the result of the intimacy of the Caribbean societies. Naturally then, the conclusion is that research is only going to yield knowledge that is already known, a summation the author arrives at after analyzing the research that has been conducted in the Caribbean in the last few years. This situation is not helped by the majority of scholars and researchers who, according to the author, are more adept at limitation than innovation.

There are 22 institutions engaged in some kind of educational research in the region. They have fairly well established data bases, hardware, and software. A large plurality of the 370 or so researchers who work in these institutions (i.e., 48%) are employed in Jamaica. A number of other interesting aspects about the composition and structure of the research community are also pointed out. For example, only a fifth of the researchers are engaged

Errol L. Miller School of Education, University of the West Indies, Mona, Kingston 7, Jamaica

in full-time research. The rest participate on a very limited and fragmentary basis. There are few scholars with sound theoretical and analytical skills. Only about a fifth of the research community holds PhDs. Over half of all researchers in education are interested only in research into teaching or curriculum and development.

The author argues that there is very little critical review or assessment of the studies carried out and no conscious or organized form that researchers can use to interact or exchange ideas. As a result one gets the impression that the major bias of most researchers in the English-speaking Caribbean is to probe questions that have already been answered elsewhere but for which the "Caribbean version" has not yet been described.

Context of Educational Research

The English-speaking Caribbean can be defined as those states that were formerly British colonies. They can be classified according to political status as follows: the older independent states of Jamaica, Trinidad and Tobago, Barbados, Guyana, and the Bahamas; the newly independent states of Grenada, St Lucia, Belize, Dominica, and Antigua; and the associated states of St Kitts–Nevis, St Vincent, and Montserrat that are still colonies of Britain. Guyana and Belize belong to the continental land mass of Central and South America, whereas the others are all islands. They share a similar history, a common language, and a basic core culture. Despite these commonalities there are distinctive differences and peculiar variations that make each state unique. The size of the population, for example, ranges from 2.1 million people in Jamaica (almost half of the total English-speaking Caribbean) to 15 000 in Montserrat.

The cultural similarities and geographic proximity of these states have allowed them to operate as a regional group. Regional institutions exist in the areas of trade, education, meteorology, development banking, and sports. These regional bonds, however, have not been strong enough to sustain political unity. An attempt in the 50s at a West Indian Federation failed. The dream of a single Caribbean nation composed of 13 or more states gave way to the present reality of numerous mini- and microstates.

Political Milieu

With the recent exception of Grenada, all the Caribbean nations have been either two-party or multiparty democracies. In the 40s Britain granted her Caribbean colonies adult suffrage. At first under British tutelage and more recently on their own, these nations have practiced the Westminster model of parliamentary democracy. Although political parties have varied widely across the ideological spectrum, the ballot box has been the means of changing governments.

Although parties may vary ideologically and governments change periodically, generally there has been continuity in domestic policies by succeeding governments. Usually, the criticism leveled by the party or parties in opposition against the government is that of magnitude, management, and method. The government is not doing enough, it is doing it inefficiently, and it is not going about it in the right way. The overall goal and objective of making the lot of the common people better is never in question. No party could aspire to public office without such commitment. It is axiomatic that governments accept to provide more and better housing, education, and health care.

Against this political background, educational change and development in the English-speaking Caribbean has proceeded on very similar lines in an almost uninterrupted fashion over the last 40 years despite several changes in govern-

ment in most of the territories. Each successive government has tended to accept the major educational policies of the previous government and has attempted either to improve upon their implementation or to move to the next logical step in the light of existing circumstances. Over the last 20–30 years educational development has been in the forefront of government policies. Education has been receiving an increasingly large share of the national budget. In most Caribbean countries the education expenditure is about 20–25% of the total recurrent expenditure of the government in any given financial year. Despite the continuity of the policy, the priority position of education and increasing expenditure, educational problems have persisted, and education continues to be a matter of great concern to both politicians and people.

Characteristics of the Educational System

Historically, the educational systems of Caribbean societies have mirrored the social structures of these societies (Miller 1976). Traditionally, the social cleavages have been along racial lines (Henriques 1953). There has been a small upper and middle class made up largely of white and coloured people and a large lower class made up of Indians and blacks. This pattern has survived with minor modifications over the years, these being the quantum of Indian and black people who have been allowed upward social mobility into the middle and upper classes. Therefore, although these privileged classes are now more multiracial in composition, the underprivileged classes remain almost totally Indian and black.

Mass elementary education has had a long history in the Caribbean. It began at the same time as the proposed abolition of slavery in 1834. It was part of the provisions for emancipation. Elementary education was free, catered

Caribbean educational systems, to a large extent, mirror the social stratification of the individual island societies. The schools of valley communities are often very much poorer than those of the hillops.

largely to the children of the exslaves, and paralleled private fee-paying elementary education that catered to the children of the white and coloured population. Mass elementary education in the Caribbean developed simultaneously, but for different reasons, as similar systems in the industrialized countries of Europe and North America (Gordon 1963).

Teachers' colleges or normal schools were created at the same time as elementary education to provide local teachers for these new institutions. Through a system of pupil teachers and monitors, the elementary school and the teachers' college became one system catering mainly to the black population. The most able and capable students from the elementary schools through the pupil teachers' system were accorded a higher level of education in the teachers' college that served to function not only as a professional institution providing teachers but also as the black people's secondary school affording them the possibility of moving into other professions than teaching.

In the 1870s and 80s, private preparatory fee-charging schools were created that catered mainly to children of the white and coloured populations. These schools were linked to the British examinations system through the examinations of the Universities of London, Cambridge, and Oxford. Because they catered to the children of the privileged section, they became the elite institutions in education. Hence, two parallel dual systems emerged, the preparatory school and high school on the one hand catering to the children of the white and coloured populations, and the elementary school and the teachers' college on the other hand catering to the black population. By the beginning of the 20th century, a scholarship scheme made it possible for a few students from the elementary school to receive high-school education. The numbers, however, were extremely limited.

This dual system of education created in the 19th century continued with minor modifications and adjustments until the middle of this century. The new stimulus bringing about change was that of the move of these Caribbean colonies toward political independence following World War II. In the wake of the Nationalist Movement, there has been the intention to eradicate the dual system of education and to create a single system that catered to all children. In addition, there was the intention to expand education significantly especially at the secondary level.

The establishment of the University of the West Indies in 1948 marked the beginning of a new era in educational development. The University of the West Indies was established by the Caribbean and British governments to provide the leadership cadre that would be needed by the Caribbean nations as they moved toward political independence. This was followed by the expansion of high schools in the mid 50s; the introduction of the Common Entrance Examinations, which made entry to high schools based on merit; and the provision of numerous scholarships through a free place system that made it possible for children from the poorer classes who passed the examinations to take up these places. The expansion of primary schooling through a massive school-building program and the expansion of teachers' colleges to meet the new demands followed in the 60s.

The 60s also saw the introduction of technical high schools, junior secondary schools, senior secondary schools, and schools for children in the 4 to 6 years old age group. In addition to the physical expansion of the system and the creation of provisions at the early childhood, primary, secondary, and university levels of education, there was also the move to transform the curriculum of schools

at all levels making it more Caribbean in content and orientation. Curriculum development projects were undertaken in every territory. In addition, there was the attempt to provide greater welfare services to assist parents and children in attending schools. This took the form of grants to parents to cover the expenses of books, transportation, etc., and the introduction of school food programs and school uniform programs. In addition, in some territories there was the move to implement compulsory education between the ages of 5 and 15. All these developments and changes occasioned much greater capital inputs that came through loans and grants from different agencies and governments and local tax revenues devoted to education. This era saw the involvement of such institutions as the World Bank, the Canadian International Development Agency (CIDA), the United States Agency for International Development (USAID), and the United Nations Educational, Scientific and Cultural Organization (UNESCO) in addition to the British Ministry for Overseas Development.

By the beginning of the 80s the educational achievements were quite commendable. More than 70% of the children between the ages of 4 and 6 years old were enrolled in some kind of school. About 95% of the children between the ages of 6 and 12 years old were enrolled in primary schools. More than 80% of the children in the age group of 12–15-year olds continued schooling until age 15, and more than 50% continued in some type of secondary school until age 17. In terms of the Third World, these are impressive statistics. It reveals a very high level of participation in the educational system. Notwithstanding these, however, the following problems are evident:

- Many students emerge from the educational system at age 12 and 15 but are still functionally illiterate. The exact percentage varies considerably throughout the region, but the figure, for example, for Jamaica is about 40% at age 12.
- Like their parents before them, the vast majority of young people emerging from the school system each year are unable to find jobs despite the fact that they are more highly educated than their parents.
- Education continues to be bookish and unrelated to the technological needs and the skill requirements of the economy.
- Education provided in cities and chief towns is of a much better quality than education in other areas whether these be rural areas of Jamaica, Guyana, Dominica, or Belize or the islands of the Bahamas.
- The educational system is still staffed by a very high proportion of untrained teachers. Despite the large numbers of teachers that have been trained over the last 20 years, the educational system has not been able to retain their services.
- Because of a combination of school and social reasons, boys do not perform as well as girls do at every level of the educational system. The Caribbean region is one of the few areas of the Third World in which illiterate males in the society outnumber the illiterate females. Boys tend to start school later, attend more irregularly, and drop out earlier with lower levels of achievement than girls. About 85% of the teachers at the primary level are women. Female teachers also outnumber male teachers at the secondary level.
- Education had raised expectations for parents and children, but their prospects for a better life in the society have not changed significantly.

The economies of all of the Caribbean nations, with the exception of Trinidad, which produces oil, have seriously suffered from the economic reversal

evident throughout the Third World since the middle of the 70s. In recent years, the educational provision in real terms has fallen. The pace of educational development and change has slowed. The societies appear to have reached the limit of what they are able to provide for the education of their children and are now looking for new and better ways in which to use the existing services more efficiently. The era of the 80s is of a different character from that of the 50s.

Sociocultural Context

There are two dimensions of Caribbean society that are relevant to this discussion. First, the Caribbean is not populated by an indigenous population that has been practicing a parent culture for thousands of years. The Arawaks and the Caribs, the indigenous Indian population of the Caribbean, were almost entirely eliminated during the period of Spanish colonialism before British colonialism. The present population of the Caribbean consists of descendants of old-world peoples who came to the region over the last 300–400 years. The emergent culture of the Caribbean is still at an embryonic stage of development. Second, the region is only now beginning to emerge from hundreds of years of European colonialism, which is the only history of any significance or relevance to the societies.

It is the combination of these two features that gives the Caribbean a uniqueness in the world community. To understand the sociocultural context in which educational research is being institutionalized in the Caribbean, it is necessary to examine these two dimensions in more detail.

Colonial Dimension: Modes of Thought

Caribbean nations have not come to national sovereignty through armed struggle. The various Caribbean nations proceeded to independence through civilized and polite discussions around the conference table. This fact underscores two important points. First, the extent to which the various Caribbean nations originally accepted the British way of life and social philosophy must be considered. Nowhere in the independence movement was there any attempt to dismantle the various structures that had been built up during the colonial era. Nor was there any assertion to disposing of everything that was British in origin and essence. Second, was the extent of the confidence of the British in the Caribbean people, in that when they came to political independence they would continue to maintain the institutional arrangements that had been established during the colonial era.

In the system of administration, Britain was always doing in the colonies what was being done in Britain itself. The people in the colonies, therefore, accepted what was being done in good faith, and, therefore, accepted the arrangements that were made. The major criticisms were those of quantity and efficiency. The essence of the independence movement was the assertion that, if the various colonies assumed responsibilities for themselves, they would do a better and more efficient job than the British administrators. Essentially, political independence would mean greater efficiency and effectiveness in the operation of the nation. In other words, the nationals running their own country would do a better job than the colonial administrators. The assumption was not that they would do a different job.

This outlook came from a particular mode of thought, the *traditional mode*, which was conditioned by the colonial era. Its basic elements can be identified as follows:

- British norms of behaviour, performance, and achievement were established as the standard for the colonies;
- Phenomena in the Caribbean were measured against these norms;
- Where differences existed, these were perceived as deficiencies;
- These deficiencies were perceived as a sign of inferiority and were a source of shame; and
- The major objective of the society was to close the gap. The aim of the colony was to become like the mother country. The major elements of the strategy to achieve this goal would be greater assistance from the mother country through greater inputs of people, money, machinery, and methods.

In the postindependence period, there have been a few minor adjustments to this traditional mode of thought. British norms and standards have been replaced by those of North America, principally because of the proximity of the Caribbean to the United States and Canada and the increasing influence and interest of these two wealthy English-speaking countries. The mother country/colony's dichotomy has been successfully replaced by developed/underdeveloped, First World/Third World, North/South terminology. These reflect changes in styles of expressions rather than any substantive difference. Irrespective of the terminology used, the enduring characteristic of this mode of thought is its unquestioning, quantitative approach rooted in comparisons between the Caribbean and rich industrialized states.

Since the late 60s, a new mode of thought has emerged that is best described as the *progressive mode*. It is used mainly by university intellectuals, teachers, playwrights, civil servants, and professionals with a Marxist or radical ideological persuasion. It has brought a qualitative dimension to thinking and conceptualization of phenomena in Caribbean society and has infused an element of critical analysis. The essential elements of this mode can be identified as follows:

- Norms from Cuba and Russia, sometimes in combination with Western norms, are employed as standards;
- Local phenomena are measured against these norms;
- Where differences are established, these are interpreted as deficiencies and are critically analyzed within a Marxist framework;
- The magnitude of the deficiency is conceived as an index of exploitation by the former colonial or neocolonial powers;
- The cause of the deficiency is established as structural factors related to the ownership of the means of production in the society; and
- The cure is postulated as radical and fundamental changes involve the destruction of the old structures and the implementation of ideological solutions predicated by an application of Marxist principles.

Although this mode of thinking has brought a qualitative dimension to the way of conceiving phenomena in Caribbean societies, and is far more penetrating and powerful in analysis, there are a number of ways in which this mode shares features with the traditional mode. For example, both are employing standards, norms, and conceptual schemes that are external to the Caribbean society. They are drawing inspiration and authority from outside the Caribbean region. They employ strategies of adopting and adapting solutions that have been worked out elsewhere and are lacking in creativity and inventiveness. Both conceive of Caribbean circumstances within the context of deficiency. In the traditional mode this is interpreted within the context of inferiority; within the progressive mode it is interpreted within the context of exploitation. Both are equally disdainful of life as it exists within the Caribbean. Both sets of scholars are from

the same socioeconomic background. The difference between them is mainly that of age.

Emerging with the nationalistic movement leading to independence, and growing stronger since, is another mode of thought that is best described as the *nationalistic mode*. It asserts that Caribbean society must conceive and interpret itself according to its own image, judge itself according to its own standards, and recognize its own authenticity. The argument is that although the society has its roots in European, African, and Asian cultures, these have been combined and what has emerged is unique in character, legitimate in itself, and valid. The essential features of this mode can be summarized as follows:

- It seeks to recognize, develop, and establish Caribbean norms and standards;
- It accepts that not all differences between phenomena in the Caribbean as judged against European and American norms represent deficiencies or exploitation;
- It seriously questions whether the Caribbean should strive to become like the so-called developed societies, except in technology;
- Where deficiencies are recognized, structural and qualitative explanations and causes are identified;
- Solutions are developed in accordance with the specifications of a particular problem within the local context;
- Where borrowing from other cultures occurs, it is to meet a specific need as part of an overall solution and is not the total solution; and
- It rejects both the traditional and progressive tendencies to be directed by external authorities in the Western or socialist worlds. Its only loyalty and commitment is to the Caribbean nations themselves.

The essential thrust of this mode of thinking is to seek to interpret the world and Caribbean society through Caribbean eyes. It is to create and invent solutions rather than to borrow. In a sense, scholars from this mode run the risk of attempting to reinvent the wheel and also of becoming isolationists.

A significant point is that these modes of thinking are not mutually exclusive. It is not unusual to find that in one situation a particular individual may adopt the traditional mode and in another the nationalistic mode. This underscores the state of flux, the degree of inconsistency, and the degree of ambivalence existing in Caribbean society today.

Cultural Dimension

During the colonial era the Caribbean was dominated by European culture (Lowenthal 1972). The educated and ruling classes imitated the European culture closely, although Europeans represented but a small minority of the population. European culture occupied the superordinate position in the society, whereas the culture of the majority of the population, African culture, occupied a subordinate position along with Indian, Chinese, Jewish, Lebanese, and Syrian cultures. Political independence has removed European domination and with it the overt means of maintaining a minority culture. The educated and ruling classes have been left with a minority culture without either the external authority or the internal power to sustain it.

The Creole culture, of the African and Indian population, has begun to emerge as the dominant culture in the society. What is recognized as essentially Caribbean — essentially Jamaican, Barbadian, Trinidadian, Guyanese, Antiguan, St Lucian — is the very culture that before was conceived as inferior, poor, etc. The culture that now gives the unique identity and distinctive quality

to the Caribbean was in the very recent past that which was unacceptable to the educated and privileged classes in the region.

In the region there is now a gulf between the culture of the educated and the emerging dominant culture. There is a dichotomy between scholarship and culture. The current national culture has not inspired or informed education or the educated. The socialization process has literally required persons who have been upwardly socially mobile to renounce their Creole cultural background to assume the opportunities granted by education. This meant renouncement of the folk culture.

The effect of political independence has been to set in motion processes that are leading to a total transformation of the cultural status quo. Caribbean societies are passing through a period in which there is revaluation and reinterpretation of many previously held concepts and ideas within the society. The leaders of this movement are largely in the arts area.

Although the cultural identity and the soul of the society reside in the folk culture, which is now assuming a dominant position, technical and professional competence resides among those people who imitated the culture that is now being replaced. The cultural dichotomy of the past has created compartments in which needed and essential elements of the society are now trapped. This poses enormous problems in the process of cultural transformation and the reordering, revaluing, and restructuring of the various concepts and arrangements in the society.

An example of this point is the language spoken in Jamaica. Each Caribbean state has a local Creole, and these Creoles all have a vocabulary that is largely European. In Jamaica, the Creole has a largely English vocabulary. In the colonial era, English was the official language of the society, and the Creole was conceived as poor or broken English. English was the language of the educated and ruling classes, but the Creole was the language of the common people. Now, although English remains the official language, with the new interpretation and understanding of the Creole, it has been recognized as a language in itself. Its morphology and syntax are West African, although its vocabulary is mainly English. It represents the linguistic accommodation made by the African slaves in adjusting to the language demands of their new environment. The Creole is the African component of the Jamaican linguistic heritage, and it is certainly not broken English (LePage and DeCamp 1960; Bailey 1966).

As a language, it has its own rules of syntax, its unique way of codifying and interpreting experience. There are many concepts and ideas that are easily expressed in the Creole but that lose their nuance and subtlety of meaning in translation into English. The Creole is the language of cultural identity. It is the most effective means of communicating internally within the society.

With the new recognition of the Creole, a reverse kind of discrimination has developed. There are some people who have attempted to use the Creole in place of English, which is part of the new move to question fundamentally all the existing structures and to overthrow all elements that are perceived as colonial relics. However, English has a significant place in the Jamaican society because it is one of the major languages of international communication. As a small country, one of the language needs is to increase the competence of nationals to communicate in international languages, therefore, replacing English with the Creole in international communication would be very inappropriate.

For the majority of the population, there is no question that English must continue to be the official language. English and the Creole should coexist as

they serve different purposes. But there are questions with respect to the teaching and learning of English in this new situation. For example, can a Jamaican, Barbadian, Trinidadian, or Guyanese standard of English be recognized that is different from British English? How can these separate standards be defined? How can English continue to be learned and taught in the Caribbean without continuing to "anglicize" these societies.

This illustrates the need within Caribbean societies for a reversal of the conditioning processes of the past, significant changes in the socialization process, bridging gulfs that have existed between different segments of Caribbean societies, and significant revaluing of various elements of the national culture.

Research Climate

In examining the climate within which the research enterprise operates, it is important to note that the Caribbean version of colonialism had left a legacy of authoritarianism. Against this background, a process that has its essence in questioning conventional wisdom is potentially threatening to those who wish to preserve the status quo. To those who see the need for change and are looking for answers, research is given close attention and there are great expectations as to what it can do.

In most Caribbean societies there is freedom of expression and inquiry, and there are no overt or covert means used to prevent or inhibit any kind of research. What is researched and how it is done is largely determined by the individual, his or her interest, courage, and particular viewpoint. This is not, however, the case in every state. In Guyana, for example, a repressive climate exists. There is at the moment confrontation between university academics and government. The impact on research is that those who are opposing the government specialize in policy research that challenges the government position. Those academics and researchers who try to avoid this confrontation concentrate their efforts on researching questions raised by practitioners that are neutral with respect to any policy implications. The impact of the research climate in this particular case seems to be that of governing the direction of research rather than either its quantity or quality.

One factor that may be a phenomenon of small states and, thus, of particular relevance to the Caribbean is that of size and intimacy. The research community, educational practitioners, technical advisers to policymakers, and policymakers themselves all come from the same social grouping and are well-known to each other. Because of this intimacy, research into policy questions is fraught with difficulties. This is not because of any legal or official censure but, rather, from the fear of losing personal friendships or of endangering relationships. Policy research has acquired a sensitivity that may not be present in a larger society that is more impersonal. This factor is more evident in the smaller states like Barbados and the Windward and Leeward Islands than it is in the larger states, like Jamaica.

Another factor influencing the research climate in the Caribbean is the implicit assumption that conventional wisdom and common sense is a sufficient basis on which to proceed with respect to the formulation of policy and the determination of practice and procedure. Part of the colonial legacy in this region is the readiness to accept opinion as fact, to substitute assumptions for conclusions from empirical evidence, and to make changes without substantial investigation. Probably because of the small size of the states it is usually felt

that the individuals know what the problem is. The general feeling is that research is going to yield what is already known. Again, the deeply entrenched tendencies in the region to imitate rather than invent, mitigate against looking to research for answers and innovations.

The foregoing describes the political milieu, the educational setting, the social legacy, and the cultural ferment within which educational research has emerged in the Caribbean. Educational research has been influenced within this context, which is in turn influenced by this process.

Existing Research Capacity

Beginning with the Department of Education of the University of the West Indies established in 1952, an educational research enterprise has evolved over the past 30 years. It is necessary at this point to describe the existing research capability in terms of the institutions, researchers, projects that have been undertaken, support institutions and services that are in place, provisions for training of researchers, and the source of funding of research.

Institutionalization of Educational Research

University Setting

There are two universities in the region: the University of Guyana and the University of the West Indies. The University of the West Indies was the first to be established in 1948 when it began with a Medical Faculty. The Faculties of Arts and Natural Sciences followed soon after. In 1952, the Department of Education was established. This marked the establishment of the first educational institution in the English-speaking Caribbean with a mandate that included educational research as a substantive activity. In 1962, the Institute of Education was established, and this significantly added to the educational research capability both in terms of personnel and in terms of financing. Because the Institute of Education was established regionally, it also meant the spread of educational research from Mona in Jamaica to Cave Hill in Barbados and St Augustine in Trinidad. In 1964, Guyana seceded from the University of the West Indies and established its own university, the University of Guyana in Turkeyen, Georgetown. With the establishment of the Faculty of Education in 1966, educational research received an additional institutional status.

The University is a community of scholars. Research is part of its tradition. The expectation is that the University's intellectuals will not only transmit knowledge but will inquire also into its nature and depth, extend its boundaries, and expand understanding. Accordingly, the University is accorded a degree of autonomy that allows it to be somewhat removed from the confusion and rapid pace of the real world. The Caribbean adopted the classic European and British conceptions of the University. With the University came research, including educational research, as part of the package.

Ministry Setting

Government ministries in the Caribbean are the creation of the political march to national sovereignty and independence. During the colonial era the various colonies were governed by departments headed by directors from the British civil service working out of the colonial office. Their source of authority and information did not arise from within the colony but from the intellectual

centres of the mother country. Research was not a part of the colonial framework.

In the process of transformation from colony to sovereign state, departments of education evolved into ministries. By a process of accretion the ministries of education acquired expanded functions and additional service roles. These functions included planning, curriculum development, measurement and evaluation, test development, social welfare, psychological services, and special education. In the pursuit of a knowledge base for the execution of these functions and in performing several of these services, educational research was encompassed either as a supporting activity or as a by-product.

In Jamaica and Guyana during periods of rapid developments involving far-reaching structural changes, with education being portrayed as the flagship of the armada of national reconstruction, research units were established to perform the following functions: to assist in decision-making by providing an empirical data base; to justify increasing expenditure on education; to provide quality control, including both formative and summative evaluation; and to act as a problem-solving device especially with respect to some of the more intractable problems within the educational systems.

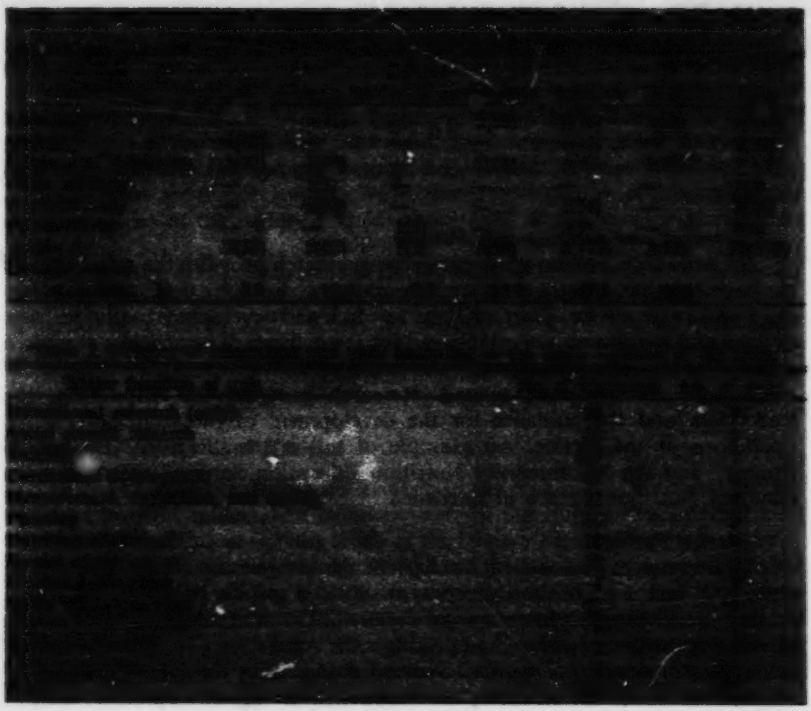
Although the institutional base for educational research in ministries is smaller than that in the universities, it constitutes a very significant part of the research capability of the English-speaking Caribbean.

Private Enterprise Setting

Over the last 5 years two educational research institutions have been created as a result of private enterprise. The Mel Nathan Institute in Jamaica is sponsored by the United Church of Jamaica and Grand Cayman, whereas the Caribbean Research Centre in St Lucia is established as a nonprofit, limited liability company. Despite their differences in format, both are the direct result of the personal interest and commitment to research of individuals. Both of the individuals in charge of these institutions are trained in research and are committed to the pursuit of research but were unable to do so within the framework of the existing institutions. Accordingly, they have created their own institutional framework in which to pursue their research interests. In doing so they have made a significant departure by facilitating educational research outside of the context of either the university or government. In terms of size and current impact, these institutions are quite insignificant. However, they could signal the evolution of a new element in structural arrangements for educational research in the Caribbean. Both institutions have attracted funding from their respective governments as well as international agencies. Whether such institutions will survive still remains to be seen.

Taking account of these three distinct settings, there are 22 institutions engaged in some type of educational research in the Caribbean. These institutions are located in the following countries: the Bahamas, two (9.1%); Barbados, five (22.7%); Eastern Caribbean, one (4.5%); Guyana, three (13.6%); Jamaica, eight (36.4%); and Trinidad, three (13.6%). Table 1 shows the parent bodies that sponsor these research institutions and the numbers of researchers related to the institutions.

Although research is being done in 22 institutions, in many of these there are different departments, sections, or units engaged in educational research. Table 2 shows the different types of units, i.e., sections, departments, etc., that are involved and the number of researchers attached to these units. Added to this list are the two regional projects, namely, the "Caribbean Educational Development Project" and the "Regional Pre-School Project."



From the information contained in Tables 1 and 2, there are a number of salient points that should be noted:

- The institutional capacity in educational research in the Caribbean is built around a small core of institutions, namely, seven educational research units. There are 42 units in all, but the remaining 35 are involved in educational research in a secondary way;
- The institutional capacity is located mainly in (a) tertiary education, primarily the university and (b) ministries of education;
- The units to which educational research is related as an ancillary activity are mainly involved in teaching, curriculum development, measurement and evaluation, testing, and planning; and
- Jamaica, in terms of quantum, has the largest share of research institutions.

Operational Style

Basic Research Pattern

In examining the work of the 22 institutions involved in research, a number of different patterns or styles of operation can be identified. In the basic research pattern, for example, an individual pursues an idea that is mainly the creation of his or her own intellectual interest. The result has no immediate application, although taken to its logical conclusion in a particular setting it could yield answers to particular problems. At best, in practical terms, it is a long shot. An example of this type of work currently being done is the work on "Dread Talk: the Language of Rastafarians in Jamaica."

Applied Research Pattern

In an applied research pattern an individual or group has worked out an idea or an approach. It has been logically deduced from some basic research and tested on a pilot basis within a particular setting. If the pilot test proves the efficacy of the new approach, the strategy or model is then implemented on a system-wide basis. An example of this is the "Curriculum and Language Arts Materials for Grade 1–3" developed by the Language Materials Workshop in Jamaica.

Research and Development Pattern

In a research and development pattern research provides the rationale and the basis on which strategies, materials, and procedures are developed concerning a particular service. Through these research and development activities, new policies and procedures are established for the delivery of a particular service in a given setting. The research and development activities and the operation of the service are integrally related. Research provides the inspiration, the leadership, and the guidance for the development of the strategies for the operations of the service. An example of this is the "Regional Pre-School Project" and the "Community Nutrition Education Service" offered by the National Nutrition Centre in Barbados.

Service Pattern

In a service pattern a client has a particular interest and offers a contract to a research unit, e.g., of the University, to solve a specific problem, evaluate a project, or investigate some special concern. The unit accepts the contract, carries out the investigation, and produces the results for a fee. An example of this is the "Evaluation of the Shift System" requested by the Jamaican Ministry of Education and carried out by the Research and Higher Degrees Section of the School of Education at Mona.

Support Service Pattern

In a support service pattern some activities are being carried out based on a priori assumptions. However, research is employed to provide information to ensure that the objectives are achieved. Research literally provides summative and formative evaluations so that the different elements are contributing to the overall achievement of the goals in the determined fashion. An example of this is the use of research in the "Project for Early Childhood Education" in Jamaica that took place from 1966 to 1972.

Spin-Off Pattern

In a spin-off pattern research emerges as a by-product of the execution of some service or task. For example, in the performance of social work functions, case studies are done in meeting the needs of various parents and children. From the analysis of these case studies, inferences are made concerning the kinds of problems experienced by parents and children in, for example, attending school. Although the performance of a service is the major function, it involves the collection of data, the analysis of which yields important research findings.

Researchers

There are 370 persons who have had training in educational research and are engaged in educational research either in a primary or secondary way.

Table 1 shows their location by territory and how they are related to the parent bodies sponsoring the various research institutions. Table 2 shows researchers as they are related to the various types of units engaged in educational research.

From Tables 1 and 2 the following salient points can be made: (a) only 20.5% of the researchers in the Caribbean are engaged full time in educational research with the majority engaged in research on a part-time basis; (b) 51.4% are engaged in teaching and research or curriculum development and research; (c) researchers are almost evenly divided between ministries of education and the universities in the region; and (d) about 48% of the researchers reside in Jamaica.

About 20% of the researchers in the region hold PhD degrees, 65% have an MA, and 15% are graduates below the MA level. Areas in which there is strength in terms of research skills possessed include survey methods, correlation analysis, and research in curriculum, testing, and linguistics. Weak areas are in classroom observation methods and experimental, longitudinal, and action research.

Research Projects and Studies

In considering the studies undertaken in the region, one must include not only the projects undertaken by researchers in research institutions but also the work of students at various levels of the tertiary education system. Briefly, one can make the following observations about the research studies undertaken:

- The types of studies undertaken vary considerably. By and large, they are mostly individual efforts. There is very little team research.
- There is no consistency throughout the Caribbean with respect to the question of relevance, where relevance is interpreted to mean the congruence between the research done and the national concerns as identified by policymakers and practitioners. In Barbados, Guyana, and Trinidad there is a tendency for research studies to be more directly related to the concerns of practitioners and policymakers than is the case with Jamaica and the Bahamas where the dominant factor appears to be the particular interest of the researchers concerned.
- Although there is evidence to show that some research studies have made dynamic and significant impact on both policy and practice, much of the research that has been done has had little impact on either one.
- The number of studies resulting from the work of students in the universities of the region far outnumber each year the number of studies produced by research institutions.
- There has been very little critical review and assessment of the quality of the research studies produced from all sections of the research community in the Caribbean. State-of-the-art papers are almost nonexistent. Leo-Rhynie (1980) has produced one of the few reviews of research that has been done so far.
- There is no organized research community in the Caribbean that operates a professional forum through which researchers can interact and exchange ideas. Researchers in the region tend to relate more to their international colleagues in their particular discipline rather than across disciplines to their colleagues working in their own institution or country.

Support Institutions

In the development of an institutionalized framework for educational research, necessary infrastructural support links have been established. These

are libraries, documentation services, information networks, information data bases, and computer facilities.

Libraries and Documentation Services

Looked at across the region, the library services are the best developed, single infrastructural element. Trinidad has the best service relative to educational research, whereas the Bahamas has the poorest. However, none of the services in existence could be regarded as being adequate. The total number of books in stock, the number of periodicals subscribed to, space provided, and the services given are all in need of significant increase and improvement. There is only one educational documentation centre in the region. This is located on the Mona Campus. Because this centre doubles as the faculty library, it has not been able, within the space and staff constraints, to develop fully as a documentation centre. The Documentation Centre, however, is the best source of unpublished research studies done in the English-speaking Caribbean.

Information Networks

There is only one information network that has been established to collect primary source materials for social science and educational research. This is the Socioeconomic Network in Jamaica. This network is still at an embryonic stage and its existence is better known by the information specialists than by educational and social science researchers.

Computer Facilities

With the exception of the University Computing Centre at Cave Hill, the computer hardware that currently exists in the region has the capacity to provide all the data processing needs of educational research probably for the next 5 years. The greatest problem lies in the area of software development. In this regard, the greatest need is for the development of packages and programs related to the analysis of data generated in the field of linguistics and language research.

There are statistical packages available for psychometric and survey-type research. The best used is the SPSS package, but there is a tendency for researchers to continue to use the analytic tools available in this package even where there may be limitations because of the particular statistical method employed by the package. In the Bahamas, in particular, there is also a shortage of systems analysts and consulting programmers. However, this is generally true throughout the region. The two types of machines most commonly used now in the region are the IBM 370 series and the ICL 1900 series. In large measure researchers in the region are lacking in computing programing skills and as such, need to rely heavily on programing specialists and systems analysts.

Links to Information Systems

Jamaica has the only fully functioning computer terminal link to data bases in North America. Currently, the Caribbean Industrial Research Institute (CARIRI) in Trinidad is upgrading its telex link to a terminal link. Soon, researchers in Trinidad will enjoy a similar facility. The Caribbean Development Bank in Barbados is about to institute a similar service. In Guyana and the Bahamas there are neither links nor any immediate plans to implement such a service.

Now the University of the West Indies and USAID are looking at the feasibility of establishing satellite telecommunication linkages between the

various English-speaking Caribbean territories for the purposes of university teaching, meetings, and staff development programs. Automated national information networks in the various Caribbean territories could possibly be linked by such a system for the purpose of sharing educational information.

Training Researchers

The training of educational researchers is one of the tasks of the higher degrees programs of the universities in the region. Both universities have developed programs in the field of education at the MA level. The University of the West Indies has established a program at the PhD level. Both higher degrees programs at the two universities have followed the British tradition very closely.

Master's Program (University of Guyana)

In 1976, as a result of a needs assessment survey done by consultants, the Ministry of Education, and the University of Guyana, it was agreed to create an MA program in education. The aim was to bring together persons who were currently employed in curriculum development, test development, and research units of the Ministry of Education and promising individuals within the educational system to upgrade their skills in the areas of measurement and evaluation, curriculum development, and research. The program was executed by a team of university professors who taught courses at the University of Guyana in the mornings and worked as consultants in the respective units of the Ministry of Education in the evenings.

The professors were to work with the various units on the national needs identified by the survey and also to develop the degree program from a task-oriented point of view. In training personnel in this way, a number of important advantages were expected:

- There would be no disruption of the work situation by the individuals being taken away from their jobs;
- It would be more cost effective to bring a team of competent university professors from North America to Guyana than to send the students to universities in North America;
- Because the program was developed in the local setting, it would be possible to train individuals so that they were conscious of national needs and of the particular social context in which they would have to work and be effective; and
- With the university lecturers teaching the courses also acting as consultants to the Ministry of Education, the job situation should have become more in line with the teaching program. The program consisted of a core of courses including: foundations of curriculum, psychology of learning and teaching, research design and methodology, educational statistics, and educational psychological measurement. In addition, there were specialized options from which individuals had to choose two courses. These options were curriculum evaluation, affective assessment, educational and psychological measurement (advanced course), and applied multivariate analysis. The coursework was completed in the first year. During the second year students wrote a substantial dissertation based on research relative to their areas of specialization. Of the 28 persons who started, two left after the first year, one did not complete the course and one other was not awarded the degree. Finally, 24 students graduated with an MA in education in August 1978.

In May 1981, of these 24 individuals 20 had remained in the Caribbean, 19 in Guyana and one was employed in the Caribbean Examinations Council in Barbados; four had migrated outside of the Caribbean; of the 20 remaining in the Caribbean, 12 had received promotions in their jobs since graduation; four of the graduates were involved directly in educational research.

Over the 3-year period, migration of academics and intellectuals from Guyana has been quite high, but 87% of the graduates from this program are still in the Caribbean, which indicates the successful retention of these graduates by the Guyanese educational system. It should also be noted that the Faculty of Education of the University of Guyana is still in the process of establishing an MA degree program on a continuing basis.

Higher Degrees Program (School of Education, Mona)

The higher degrees program of the School of Education, University of the West Indies, Mona, began in October 1964. At first it was the responsibility of the Teaching Section of the school, but now it is the responsibility of the Research and Higher Degrees Section. In the 1980–81 academic year there were 124 students enrolled in the MA program and 15 in the PhD program. The majority were enrolled on a part-time basis.

Of the 53 graduates from the higher degrees program at Mona, only five have migrated, three of whom were English and returned to England, one was Canadian and returned to Canada, and only one West Indian graduate from this program has migrated. Several of the MA graduates have gone to North America to read for their PhD and, so far, have all returned to the Caribbean on the completion of their programs. This high retention of graduates in the region is significant considering that Jamaica has experienced the highest outflow of professionals during the last 5 years.

The majority of graduates from the higher degrees program at Mona are employed in tertiary institutions including the University and ministries of government. The policy of the University of the West Indies is to promote undergraduate study and to leave postgraduate work to the ingenuity and resources of the particular faculty. The burden of the cost rests with the students. There are very few postgraduate awards available in education or in any other faculty, but there is a great demand by students for these courses.

Because many students must take some courses on a part-time basis, the drop out rate is high. In addition, an average of 5 years is required, on a part-time basis, for students to complete the MA degree program. Although a successful program at the MA and PhD levels has been established at Mona and this level of training has produced educational researchers, this has been accomplished against significant odds.

Journals

There are 28 journals published in the Caribbean that report research findings. Table 3 shows the distribution of these journals according to country, the type of audience they serve, and the size of the circulation of the journals.

During the 70s, there was an increase in the growth of indigenous literature. Although the growth of journals publishing educational results is a positive sign, and there is a growing tendency among researchers to communicate with each other through journals, the fact remains that the indigenous literature is still in its infancy. There is room for considerable growth and expansion.

The larger publications, like "Social and Economic Studies," "Caribbean Quarterly," and the "Caribbean Journal of Education," have been recognized by the University of the West Indies for the purposes of promotions and appointments. This is a significant development, because the tendency in the past was to accord such status only to research that was published in journals in the First World. With the recognition of these Caribbean journals, researchers are encouraged to publish their findings in the local setting in which the results were produced. There are, however, many researchers in the region who still publish their research results in foreign journals. In many instances there are legitimate reasons for not publishing locally. For example, the majority of journals in the region are often considerably behind schedule, therefore, it is sometimes easier and faster to publish abroad.

A preliminary survey of the research papers contained in the technical journals that include reports on educational research in the region shows that:

- There are fewer papers published per year than the amount of work done. Many research projects only record and disseminate their results in mimeographed papers with very limited circulation. Only a minority of these are actually published and still fewer in the local journals;
- There is no common theme or concern that unites or gives coherence to the various research papers. There is a wide diversity of concerns and interests that reflect strong individualism;
- Most often the papers are concerned with deficiencies in Caribbean education as defined by some foreign paradigm and as measured by instruments imported from outside the region;
- Some papers manifest weaknesses in communication skills on the part of the researchers, especially with respect to reporting their findings with thoroughness, clarity, and conciseness.
- The inadequacy of the library and documentation service facilities, and in some cases the lack of links to information data bases, are evident in papers and research reports in that literature is inadequately represented and does not reflect recent developments or include updated information.
- Some papers are weak in methodology with respect to sampling, the treatment of different variables, the use of instruments, and in the overdependence on paper and pencil techniques as the major source of information for the various investigations. The majority of instruments used in the various research projects are, by and large, imported from First World countries and are only slightly modified. Again, in many instances, sufficient safeguards are not taken to ensure that the reported findings accurately reflect reality. Because of these

weaknesses, generalization outside of the research setting is extremely risky. Also, in several instances, there are weaknesses in the interpretation of results because variables that could very likely influence the phenomena being investigated were not included or were treated inadequately.

- The general impression given in most research papers is that researchers have been following rigidly the ideas, paradigms, procedures, and approaches that have been developed in the First World setting. On the whole, there is a lack of ingenuity, inventiveness, and originality. The impression is that the major bias of Caribbean researchers is to probe questions that have already been answered elsewhere but for which the Caribbean version has not yet been described.
- In spite of the foregoing, however, there are several quality papers published each year that do report research displaying originality.

Quality of Research

There has been little or no critical review or assessment of educational research in the English-speaking Caribbean. The only review of educational research so far is that of Leo-Rhynie (1980) in which a summary is given of some of the MA and PhD studies related to teacher education that have been done in the Higher Degrees Section of the School of Education, Mona. It is understandable that in the first 30 years the research enterprise has been concerned more with doing research than with attempting to review what has been done. However, sufficient research has been done to date in some areas to justify state-of-the-art reviews, particularly because so much of the work that has been done has been unpublished. The published papers in both foreign and local journals represent only a fraction of the total work that has been done. Researchers about to embark on any new subject have difficulty in obtaining information on the work that has been done because of the very nature of the Caribbean region.

Statements that can be made about the quality of research in the Caribbean region in the absence of such reviews can only be of the most general kind. One could say that excellent work has been done in some areas and poor work in others, but such a statement could be made about anything anywhere. Statements about quality must of necessity be detailed and specific to provide guidance for those who would wish to use such information constructively.

Funding

At the beginning of the institutionalization process, educational research was funded principally from two sources: international funding agencies and the University of the West Indies. Although this pattern still exists, the commitment of the University has increased significantly, whereas that of funding agencies has decreased. The University's contribution represents indirect support of governments, but over the last decade governments have become more directly involved in providing both core and project funding.

In the 60s international funding agencies provided core funding for the establishment of two research units: the Institute of Education of the University of the West Indies and the Carnegie Research Unit of the University of Guyana. Both these institutional units were taken over by the respective universities at the end of the funding period. They are still functioning and performing the roles originally established for them by the agencies. Although these units

are not operating under the same names, having been integrated into the structure of the universities' faculties, the integrity of their operations has been preserved.

From 1965 to 1975, international agencies gave modest support to several educational research projects. (It is necessary to point out that international agencies have never given massive support to educational research in the Caribbean.) The agencies that were most active in the Caribbean region over this decade were the Ford Foundation, the Carnegie Corporation, UNESCO, and the Centre for Educational Development Overseas (CEDO). Most of the projects were concentrated in the area of curriculum research. The existing capacity of the region in linguistic research can be traced to the assistance given by the Ford Foundation to this type of research in the late 60s and early 70s. Similar support has been given in the areas of science and mathematics by other agencies. Over the last 5 years or so the number of agencies operating and the size of the projects have decreased significantly. Now the only educational research project of any size being sponsored by an international agency in the Caribbean region is that of the International Development Research Centre's (IDRC) Project Primer in Jamaica, which is operating on a grant of half a million Canadian dollars over 3 years.

The pattern has been for international agencies to fund educational research projects that have been consistent with particular themes as determined by the policy of the agency at a particular time. There have been times when the themes being pursued by a particular agency have not been in keeping with the needs of the Caribbean at that time. This has caused problems for educational researchers because, although grants for projects are needed, the funding is not available for the purposes and needs as they have been perceived. Caribbean researchers, however, have been quite ingenious in the ways in which they have worked around this problem from time to time. Areas in need of support that have been neglected include education as it relates to social stratification, the economy and policy, as well as the training of educational researchers.

Another of the weaknesses of project funding by agencies has been that grants have been made for relatively short periods, i.e., 1, 2, or 3 years. In a few instances, there have been extensions of grants for as long as 6 years. Because of the weak base of research in some areas, work has to be carried on for a much longer period before the desired objectives can be achieved. This is probably endemic to the very nature of research itself and may not be a phenomenon restricted to the Caribbean. The lack of congruence between the funding period and the time required to complete a particular process can also inhibit accomplishment of various objectives.

Another consideration is that at times projects have been implemented by agencies that have ignored work being done in the region. Consequently, their efforts have been in advance of the particular stage of development of that activity in the region. An example of this is the UNESCO Curriculum and Teacher Education Project of the 70s. The overall result of such activity is the dissipation of effort and extremely limited success.

Because of the economic stringency experienced by most Caribbean states at present, both project and core support for research have been kept to a minimum. The fact that one government has included educational research as part of a loan package from an aid source would indicate that were such funding available at least some governments in the region would make use of that facility.

Over the past decade the indigenous support for educational research by governments and the University has increased. At the moment, all core funding for educational research institutions in the Caribbean is from local sources. To a great extent the majority of the projects currently being carried out are also sponsored from indigenous resources. Because the funding available from local sources is necessarily small, the projects that are currently being carried out are by and large very restricted in size and scope. Although the increasing support of educational research by local sources is a healthy sign, the ability of these sources to provide adequate funding is extremely limited.

Institutionalization of Research Capacity

The Caribbean is a conglomeration of states that are not all at the same stage of development. Furthermore, within any single territory, development is not uniform. One sector may be fairly advanced, whereas another sector may exist at a very rudimentary stage. This lack of uniformity of development in a single territory and within the region as a whole makes it necessary to take the stage of development into consideration whenever decisions are being made about the Caribbean.

In applying the concept of stage of development to educational research in the Caribbean, two criteria are used: the level of institutionalization in a particular territory and the quantum of research output. Using these two criteria it is possible to identify five levels of development.

Level 1: Windward and Leeward Islands

These seven ministates, often referred to as the Lesser Developed States of the Caribbean, have little in the way of educational research capacity. Although their teacher training program tends to sensitize teachers to educational research and there are some persons trained in educational research working in these states, there is only one small private research institution. The quantum of research papers, projects, and studies produced is very low. Support infrastructures for educational research are almost nonexistent. In fact, an educational research enterprise itself is almost nonexistent in these states. Looking into the future, one cannot envisage each of these states developing its own research enterprise. The best that can be expected is that over time they might participate meaningfully in any regional research activity that pays particular attention to their interests and concerns.

Level 2: The Bahamas

In the Bahamas there are two institutions, the College of the Bahamas and the Ministry of Education, that are engaged in educational research. Linkages are just beginning to be made with the various support infrastructure — library, computer centre, and documentation services. There is a nucleus of trained researchers living and working in the Bahamas who have a commitment to educational research. The Bahamas, therefore, are at the point of institutionalizing a research capability in education.

Level 3: Barbados and Guyana

In Barbados and Guyana research institutions have been established, the necessary support services are in place, and the necessary linkages have been established between the research institutions and the support services. However, the level of research output is low. The reasons for this differ between Barbados

and Guyana. In Barbados, the preoccupation with service functions and a general feeling that the causes of the problems that exist are known mitigate against a higher level of output. In Guyana, there is general malaise and low morale in the society that also affects the educational research enterprise.

Level 4: Trinidad

In Trinidad research institutions have been established, the support infrastructure is in place, and the linkages have been established between the research institutions and support services. There is a small nucleus of researchers who are engaged full time in educational and social science research. There is evidence that research has made an impact on policy and practice in a number of instances. However, the research enterprise is small and its range of interests and activities has been limited to linguistics, curriculum development, and social science questions.

Level 5: Jamaica

The size of the research enterprise in Jamaica is almost the same size as the rest of the region combined. All elements of a support infrastructure are in place and functioning. In addition, there is a policymaking body, an Educational Research Council, that gives general direction and focus to research in the country. A wide range of research interests is pursued and the quantum of the research output is significantly larger than that of any other territory.

Summary

The five different levels range from virtually no research enterprise to where the research enterprise is firmly established and operating, but not even in Jamaica, at level 5, can the research enterprise be described as adequate to the task that research should perform relative to the educational system and the society. By and large, the research institutions do not have any influence on thought or practice in the educational system. There is a minimum amount of team research or large-scale projects tackling national problems in a multidisciplinary way. There is very little experimental research and only a few instances of longitudinal research.

If the stages of institutionalization are looked at in terms of time, the relative sophistication of the Jamaican research enterprise is to be expected because the process of institutionalizing research in the region began in Jamaica 30 years ago. Perhaps this level of sophistication is as much as could be expected in 30 years, but the need for continued development is essential.

Utilization: Has Research Made Any Difference?

Research Utilization

Has educational research in the English-speaking Caribbean made any difference to educational policy or practice? The legitimacy of this question resides in the assertion that a research enterprise in education must justify its existence in making significant contributions to both policy and practice. Without such impact the research process and enterprise are bound to be called into question.

It is possible to cite numerous examples from around the Caribbean, both at the national and at the institutional levels, that prove that educational research has indeed influenced educational policy or practice:

- Linguistic and language research by Dennis Craig and his colleagues in Jamaica and its impact on language teaching in schools, language arts policy of the Ministry of Education, and language materials in the form of textbooks, workbooks, and teachers' guides in use in grades 1 to 3 in the Jamaican schools;
- Linguistic and language research by Lawrence Carrington and his colleagues in Trinidad and its impact on language arts curriculum policy of the Ministry of Education;
- Research into the levels of mathematics achievement in schools in the Windward and Leeward Islands by Desmond Broomes and its subsequent impact on curriculum policy of the ministries of education and curriculum materials used in schools in the Windward and Leeward Islands;
- The use of research in the project for early childhood education in Jamaica coordinated by Dudley Grant in developing a successful intervention strategy to significantly improve the quality of basic schools and its adoption by the ministries of education in Jamaica and Dominica as the model for the national systems; and
- Research on the 70:30 system of awarding school places to high schools in Jamaica by Errol Miller and its subsequent impact on the change of policy by the Ministry of Education, Jamaica, on entry to high school based on academic merit.

These examples illustrate but do not exhaust the research that has made a difference to both policy and practice in education in the Caribbean. In examining these examples, there are a number of elements that form a common pattern. This is not to say that once these elements are in place research will have an impact upon policy. There is no assumption or assertion of being able to identify necessary or sufficient conditions. There is no attempt to determine causality. However, correlations are noted. These factors could relate to the stage of institutionalization of educational research in the Caribbean, the size and intimacy of Caribbean society, or possibly to the climate that exists in the Caribbean and that influences research policy and practice. The common elements are:

- *The researcher:* In each instance there is a researcher who creates the project and provides consistency and continuity to the research effort. He or she may be assisted by different individuals and agencies at different times. Their efforts may be discontinuous or sporadic but the researcher's is continuous, and reflects commitment to the particular idea and project.
- *Impact time:* In the examples quoted, the shortest amount of time that passed before the research had an impact on policy was 6 years. In Craig's case, it was 14 years; Carrington, 13 and still continuing; Broomes, 6; Grant, 8; and Miller, 7. Timing, however, is crucial, because the impact of research on policy assumes that the research results are available at the particular time when a policy change is contemplated. This is usually when a large number of other changes are being contemplated. Usually, this coincides with a change of government or change of minister within the same government.
- *Networks and linkages:* In each instance through a number of different mechanisms involving networking, linkages were established between the researchers and research institutions on the one hand and the policymakers and policymaking institutions on the other. This linkage plays an important part in the adoption of the research and its translation into policy.
- *Dissemination:* The dissemination of research results plays an important part in creating the climate for change by providing the logical rational frame-

work within which existing policy can be criticized successfully. It also provides the rationale for the adoption of the new policy.

• *Absence of evaluation:* Although research may be used to establish the efficacy and effectiveness of the new strategy in a pilot setting, once it is implemented on a national scale it is assumed to be equally effective. There is no evaluation to verify this. Probably the experiences quoted here are too recent for such evaluation to have taken place. These may take place in the future. The point is that research is used to test new strategies and methodologies within a pilot setting to convince the policymakers that it should be implemented in the system, but once it is implemented there is no check to find out if the claims made by the new strategies are actually achieved. It is a well-known fact that within the context of a pilot setting with the direct involvement of the creators of a particular strategy, performance levels can be obtained which may not be replicated when that very strategy is generalized to the entire system.

Research Utilization Issues

Basic vs. Applied Research

It is interesting to look at the controversy over basic vs. applied research by comparing and contrasting the linguistics and language research of Craig in Jamaica with Carrington in Trinidad. Craig started his research in 1964. The new curriculum, the language arts policy, and curriculum materials were implemented in the Jamaican educational system beginning in 1978. Carrington started his research in Trinidad in 1968 and has now arrived at the stage reached by Craig in 1972. He is just at the point of translating the research into detailed curriculum for grades 1–3 and producing the supporting curriculum materials.

One of the contributing factors to this difference in timing is that Craig in Jamaica had the benefit of a complete, accurate description of the Jamaican Creole by linguists from the Faculty of Arts at Mona. From this base, he made certain logical deductions with respect to the educational implications consequent upon the differences and the interference that existed between standard English and the Creole in the learning of language by Jamaican children. He could, therefore, immediately apply research to determine the language that the child brought to school at age 6 or 7 and the teaching model that would be most effective in this linguistic context.

Carrington in Trinidad, on the other hand, only had a partial description of the Trinidadian Creole. This was in no way as comprehensive or as reliable as the description available to Craig in Jamaica. Carrington had to carry out the basic research into Trinidadian Creole himself to complete the linguistic analysis before determining the language of the children and the teaching strategy that would be effective in the Trinidadian situation. This meant that Carrington had to spend a much longer time in basic research before tackling the problems that were his urgent and immediate concern.

At the moment in the Caribbean it is the common view among many policymakers and practitioners that basic research is a luxury that cannot be afforded. Applied research is conceived as the main research that is required. The above example indicates that there are some problems in which basic and applied research happen to be different stages of the same process. In addressing some of the problems related to this phenomenon, it is impossible to proceed to applied research before obtaining the necessary answers from basic research. To proceed in haste to applied research is actually a waste of time.

The most expeditious action involves completing the basic research germane to the problem. This is an issue that funding agencies, policymakers, and practitioners need to examine with researchers to be able to chart the most effective course in any given exercise.

Discipline-Oriented vs. Action-Oriented Research

Both Craig and Grant began working together on a single project designed to improve the language learning of young children. A conflict arose between them, however, with the result that two separate projects were established that would allow each to tackle the problem according to his own strategy. The conflict consisted of the following: Craig attempted to attack the problem through discipline-oriented, linguistic-type research probing into the nature and morphology of the Jamaican dialect, the difference in structure between this dialect and standard English, and the interference that was consequent upon these differences and the strategies that had to be used to overcome this interference. Grant, on the other hand, focused on the fact that the teachers in the schools were untrained, inexperienced, poorly educated, and lacked the necessary equipment and materials in the schools to teach effectively. Unlike Craig, he had no intention of immediately creating any new knowledge about language learning or teaching. His concern was to improve the situation immediately by focusing on measures to upgrade the quality of the teachers and materials needed by the teachers for effective teaching. His approach was to use the best knowledge available at that time about language learning, translate it into terms that were understandable to the teacher, and show the teacher in detail how such knowledge and strategies could be applied in the classroom. While Craig's approach was discipline-oriented, Grant's approach was that of an intervention strategy in which research was used to determine the characteristics of the teachers and the learning situation and to evaluate the effectiveness of the treatment over time.

It is interesting to note that Craig's approach had the approval of his university colleagues, whereas Grant had the approval of the practitioners and officials of the Ministry of Education. The approach of both persons finally resulted in highly successful projects. Grant's strategy of improving the quality of poorly educated, inexperienced, and untrained teachers was remarkably successful. Craig's linguistic-oriented research was equally successful. Both improved students' learning. However, these two strategies could not be accommodated in the same project because the essence of their operations was so different.

The Researcher — A Critical Factor

In every instance where research made a difference to policy or practice, not only was the research itself responsible but the researcher was also important. It would seem that the researcher cannot be separated from the research. This factor might be related to the stage of development of educational research in the English-speaking Caribbean. Large-scale team research by institutions is generally the rule. Research projects are invariably the work of particular individuals even if those individuals are assisted from time to time by colleagues or research assistants. In this context, who the researchers are, where they work, who they happen to know within the policymaking structure, and how they are regarded within that framework are as important as the choice of methodology, the thoroughness of the analysis of the data, the soundness of the interpretation, and the clarity with which the implications of the research are

related to current educational practice and policy. The recognition of the researcher by his or her colleagues, policymakers, practitioners, and international agencies seems to be as important as the research findings. This factor could explain why some research findings were not used during a particular period, although they were relevant to various concerns at that time and provided necessary answers.

Linkages and Networks

In looking at the activities engaged in by researchers in the Caribbean, a distinction was made between those who are involved full time in research and those who are involved in research while also carrying out other responsibilities. It would appear that those other responsibilities, especially teaching, are important in establishing linkages and in forming networks that are crucial to the translation of research into both policy and practice. Where researchers are also engaged in teaching at the higher degrees' level, they use their findings in their teaching and in so doing disseminate their results in their classes. In the Caribbean, persons enrolled in the Diploma in Education, MA, and PhD programs are invariably located at strategic points in the hierarchy of the educational enterprise. By this means researchers, through their past students, develop linkages with the policymaking structure. Even though involvement in research and other activities may reduce the amount of research done by the researcher, this dual responsibility could enhance the chances of the use of the research. It could be advantageous under certain circumstances for researchers to be engaged both in research and in other activities, but it must be ensured that involvement in other activities does not preclude the conduct of research entirely.

Using Research Results

All policy questions are usually sensitive, but some are more sensitive than others. The use of research findings as the base to formulate policy contains an element of risk because no one can be certain that the policy will have the desired effect. There are times when research results are not used in a particular situation, not because the implications for policy are unclear or because the research was not well done, but because the policymaker is not prepared to take the risk involved. In the case where Miller was adviser to a Minister of Education, the Minister did not implement the policy simply because he would be the one taking the risk. Were it not for the fact that the following year Miller was in a position to take responsibility for the risk involved, the particular policy would not have been implemented. It is important to consider this factor of risk that researchers, because of their confidence in their work, would be willing to take but the policymakers would not. Again, this may be a factor related to the stage of development of both policymaking and research in the context of the Caribbean.

Research, Funding, and Policy Cycles

Research, funding, and policy all have different cycles. The funding cycle, is related to two primary factors, the economic circumstances prevailing at a particular time and the priorities established by agencies and governments as their major concerns at that particular time. Policy has its own cycle where, in the Caribbean, policy changes are usually related to changes of governments. Most Caribbean territories are two-party democracies that change governments periodically. Sometimes changes are related to changes of Ministers of Education

within the same government. In many instances, changes in policy have to await these events.

Research has its own cycle where basic is followed by applied research, followed by operational model-building engineered in the context of the real situation and evaluation. The possibility of research having an impact on policy relates to the ways in which these three cycles coincide.

Timing is also a critical factor. The funding and research cycles must coincide before the point at which the policy cycle is ready for significant change. For example, policy changes stimulate research that attracts funding. The research findings then form the base of new policies in the next turn of the policy cycle. Where research misses a "policy opportunity," it simply has to wait for the next turn of the policy cycle. An example is the case of the language research of Carrington in Trinidad, where in 1975 the system was ready for policy changes but the research had not progressed to the point where it could yield specific curriculum materials and policy.

Another consideration is where the funds are inadequate to complete research. There have been several projects that have been left unfinished simply because funds have ceased or been exhausted before the project reached the point where significant results are forthcoming. This invariably increases the time taken to complete the project once it has been restarted, assuming that the cessation of funding has not been fatal to the project. The interface between policy, funding, and research is in need of careful examination and study.

Conclusion

As research has developed in the English-speaking Caribbean, policymakers have used findings for different purposes such as to legitimize policy changes, justify educational expenditures, ensure quality, and act as a problem solving device with respect to some of the more intractable problems of the system. Generally, researchers have benefited from the practice of research. In the university setting they have obtained promotions. Several university researchers have been recruited into senior administrative and policymaking posts in government. From one point of view it could be said that those who have been generating new knowledge about the educational system have been moved into policymaking and management positions within the educational system. The educational research process in the Caribbean, however, is still in its infancy, and the educational enterprise is still extremely fragile.

Except for the oil-producing state of Trinidad and Tobago, the entire Caribbean area is reeling under the strain of the global economic crisis. The predominant concern of these countries is for economic survival. Inevitably, social services including education are being cut. Generally, educational research is conceived as a luxury, hence, the fragile research enterprise is facing a very stiff economic challenge. It is possible that some of the gains made in the building of educational research in the region may be lost during this period. This would be unfortunate because the educational research enterprise at this time in the history of the Caribbean is just at the point at which it can begin to make significant contributions to the evolution of the Caribbean education and Caribbean society.

Educational research has evolved in the Caribbean as a result of political development as nations have emerged from the colonial era and educational

development as countries have attempted to institutionalize university education in the region. In this context it is important to note that it is research in general and not educational research in particular that is being woven into the fabric of Caribbean society. Greater importance and support have been attached to the development of research in the fields of agriculture, national services, and medicine.

By and large, educational research to date has reflected the sociocultural biases now dominant in the society. Most of the research has conformed to the traditional mode of thought prevailing in the society. Challenges to the status quo have invariably come from those with Marxist ideological beliefs. A few researchers manifesting nationalist tendencies have broken new grounds in some fields, language teaching and learning, for example, but their efforts are largely unrelated. There is no sense of a research community consciously and deliberately attempting to address regional and national issues and concerns.

The inventive potential of research to create new responses and relationships and its reflective capacity that promotes the questioning of conventional wisdom are still to be realized in Caribbean societies. To this point educational research has tended to be imitative rather than inventive, although there are instances of original work that has far-reaching implications. Efforts have been concentrated on trying to replicate findings in the Caribbean that have been obtained elsewhere. Probably this should be accepted in the context of being first efforts. However, the sociocultural dilemma facing Caribbean societies cannot continue to be ignored. There is a strong desire by Caribbean people to perceive themselves and the world through their own eyes. The question is, how can research inform the process?

At the moment research is very much a follower and not a leader in Caribbean societies. Probably the fact that the vast majority of researchers are from the privileged classes contributes along with the infancy of the research enterprise to this situation. To what extent can research reeducate and reorient researchers themselves? Can and will research become a leader of educational thought and in the growth of the developmental enterprise? These are important questions in attempting to predict the future development of research in this region.

In January 1981, a meeting was held in Bridgetown, Barbados, which was attended by research managers and technical advisers from ministries of education in the Caribbean, the University of the West Indies, the University of Guyana, the Caribbean Community (CARICOM), IDRC, the Ford Foundation, USAID, and the World Bank. The objectives of the meeting were to bring together researchers in the English-speaking Caribbean to explore the possibilities of establishing linkages; identify the major constraints in doing and using research results in the region; identify available resources and explore possibilities with funding agencies; discuss and examine papers produced under the auspices of the Research Review and Advisory Group (RRAG/IDRC) concerning research capacity and also the research process; and explore with technical advisers to policymakers ways in which educational research in the Caribbean can more effectively serve the policymaking process.

After deliberation of these matters over a period of 3 days, recommendations and resolutions were agreed on. For example, it was the opinion of the meeting that it was necessary for linkages to be established between educational researchers across several disciplines. However, in establishing these linkages and networks it was important not to create a new superstructure that could

lead to a weakening of existing structures. Accordingly, the Dean of the Faculty of Education in Guyana and the Dean of the School of Education of the University of the West Indies were charged with the responsibility of convening discussions on this matter with researchers of the several campuses and in the different countries with a view to determining the exact form that these linkages would take. Following these discussions the Deans would come together to correlate and coordinate the responses with a view to future implementation. One specific idea was the possibility of biennial conferences of educational researchers that would be held alternately in several countries in the region.

With respect to the institutionalization of educational research in the region, it was generally felt that some agency needed to perform a similar role in the Caribbean to that performed by the Ford Foundation in the Southern Cone of South America in the 70s. Accordingly, the universities of the region would approach IDRC with respect to a long-term project that would at least contain the following elements: (a) short-term training in the Caribbean area to improve the mix of research skills in the region, bearing in mind the current weaknesses; (b) efforts to improve the opportunities for full-time training in the MA and PhD programs now operative in the region; (c) assistance with the dissemination of research results including the translation of research findings so that they could serve the purposes of classroom teachers, teacher trainers, and policymakers; (d) improving the support services for research with particular reference to the libraries, documentation services, information systems, and computer facilities, especially with respect to software development; and (e) funding for particular projects that could be of wide regional application and significance.

The participants at the meeting were of the opinion that the universities in the region should enter into discussion with the respective governments on the possibilities of regional loans for educational research. Particular attention would be paid to the needs and concerns of the smaller less-developed independent territories that are emerging in the Caribbean.

Subsequent to this meeting consideration has been given to the establishment of a Caribbean Educational Research Review and Advisory Group as the most effective means of addressing the issue of bringing together educational researchers in such a way as to give direction, guidance, and inspiration to the further development of educational research in the region. This group would have as its terms of reference the fostering of an educational research community in the Caribbean; the commissioning of state-of-the-art reviews intended to identify promising research results and existing gaps and to determine the quality of research done in different areas; to give advice to governments, institutions, and agencies engaged in educational research in the region; and to act as a clearing house for researchers, agencies, and governments engaged in the research process.

The recommendations that were made at the meeting centred on three of the most critical issues on Caribbean educational research: the continued development of individuals as researchers in the Caribbean, institution building, and funding. Given these ingredients, there is every reason to believe that educational research will continue to evolve in the Caribbean into a very positive component of the educational enterprise.

Research Environment Study: Thailand

The educational research environment in Thailand represents a particularly striking example of the conflict between academic and administrative research. Because of several decades of university development and extensive postgraduate training of researchers both abroad and in Thailand, universities and government departments are relatively rich in skilled research staff. But the work being done in these two milieux is quite different. In universities, where considerable academic freedom exists, researchers are able to do the small individual projects that reflect their particular interests and assist them in university promotion. Such a laissez-faire approach to research, however, conflicts with the government's need for administrative research that follows an agenda designed to contribute more directly to development objectives. Although university and government researchers often assist each other in individual studies, there is little coordination in determining research priorities or examining basic educational problems in Thailand.

Research projects in Thailand tend to be well organized, but the general bias of the research community toward educational rather than social science research means that these projects tend to be narrow in focus and limited in methodology. This bias to some extent reflects the foreign training received by many Thai researchers. Such foreign influence is also seen in the choice of topics and research methods that often appear to reflect more the interests of donor agencies than of the Thai research community itself.

Most characteristic of the Thailand case study is its painstaking documentation of the nation's varied research environment. Through an extensive survey of active researchers, complementary interviews with individuals, detailed studies of selected institutions, and the unusual collection of the researchers' "best" pieces for examination and assessment, the Thai authors have produced a clear picture of both the comparative richness and the subtle problems of educational research in Thailand.

Yet the Thai researcher, especially in the university, is still relatively free to examine what he or she wants, with the major limitations being the general lack of funding and the need to be sensitive to the frequent changes in Thailand's political climate. Such political considerations may frustrate some activist researchers in examining the more glaring inequities of Thailand's development, but the majority appear quite satisfied with those opportunities for research that are available within Thailand's environment for educational research.

Thailand entered the 1980s as a middle-income developing country (by the World Bank classification) with a population of 47.9 million (1981) living in an area of 513 115 km^2, a gross national product (GNP) in 1980 of U.S.$32 966.3 million, a per person income (1980) of U.S.$618.26, and a GNP growth rate (1970–80) of 7% (National Identity Board 1982, pp. 8–9). The structure of production (by distribution of the gross domestic product (GDP) in 1979) is

Putya Sathoo, Supang Chantavanich, and Utumporn Thongutai Department of Anthropology, Faculty of Political Science, and Department of Educational Research, Chulalongkorn University, Bangkok, Thailand, respectively

26% agriculture, 28% industry, which includes 19% for manufacturing, and 46% services (World Bank 1981, pp. 134, 138).

The Fifth National Economic and Social Development Plan (1982–86) predicts that the economy will become semi-industrialized by the end of the plan period with the share of production and income from the manufacturing sector equal to that of the agricultural sector and with more economic activities in the provincial and rural areas. Better distribution of the benefits of development should reduce the number of people living in absolute poverty, which is currently estimated at 10 million in the rural areas. The unstable world economic situation during the past decade, particularly the rise in energy costs, the international financial crisis, high inflation, and low economic growth, has had a significant influence on the economy of Thailand, which depends heavily upon international trade and imports of energy, capital, and many other factors of production. The overall structure of the economy has not been adequately adjusted to cope with the frequent changes in world economic conditions. These problems are compounded by political tensions in neighbouring countries, which have created even more economic tension and increased the defence burden (National Identity Board 1982, pp. 94–98).

According to Nakata (1981), at the beginning of the 1980s, (a) the country still needed a political system that would function for a greater public good, (b) the existing political system was dominated by the administrative system, (c) the bureaucracy lacked efficiency and social responsibility, (d) the bureaucratic organization had been disproportionately expanded, (e) there was a tendency for the military to be involved in politics, and (f) there was a need to develop political parties. This was a critical assessment of the political situation that had a remarkable turning point in October 1973 when there was a popular uprising against a government under martial law and without elected representatives since 1960. The restoration of a representative government since 1973, however, has not been complete, and there was a brief interruption late in 1976 when parliament was again suspended for a year. A fully elected government was promised in 1983.

Thai-speaking Buddhists make up 95% of the population; 4.05% are Muslims, some of whom in the extreme southern provinces are also Malay-speakers; and there are a few other ethnic groups (0.95%), such as the various hill tribes of the north. Many urban dwellers are descendants of immigrants from China, but have since been largely assimilated with the Thai and have played a dominant role in the nation's economy and business. National education for ethnic minorities has not been considered a major problem by the administration. There has been compulsory primary schooling for all children between the ages of 8 and 14 with varying degrees of coverage since 1921. In 1978, the adult literacy rate was 84% and the primary enrollment rate was 86% (Office of the Prime Minister, Thailand 1979, p. 300). Compulsory primary schooling was extended from 4 to 7 years in 1962, but has recently been reduced to 6 years.

Rural areas make up 80% of the country, but students continuing beyond primary education are mainly from the urban areas. At present there are 12 universities, including two open universities without selective enrollment. Of the 10 universities with limited enrollment, seven are located in the capital city of Bangkok with some upcountry campuses, and three are in the provinces.

Although the Thai people have never had an insular outlook in their relations with other peoples, being tolerant of foreign ideas and beliefs,

adaptable and accommodating, there are, nevertheless, ideological principles that govern such relations. A love of individual freedom and independence characterizes the Thai by their own description and others' accounts and influences their contact with and borrowing from foreign countries. In the broader terms of politics, the country is, theoretically, in favour of liberal democracy, although, in practice, the concern for national survival has been given as a justification for the role of the military in national government and the alignment with foreign powers that shifts with the changing balance of the world's politics. Economically, the choice has been the free market and individual enterprise system, although powerful interest groups may exercise considerable monopolistic control. Social and cultural freedom is the ideal aspiration of every Thai, but the hierarchical and class structure of the traditional society has its own prescriptive pattern for social behaviour of the individual, which he or she may seek to avoid when possible. This constant contradiction of societal requirements and individual insistence on freedom has given rise to the "loose structure" description of Thai society. Buddhism, as a religious ideology that is liberal and tolerant, fits in well with the Thai character.

The Context of Research and Education

Thai traditional education in its formal form was monastic education, where only boys and men could obtain instruction from Buddhist monks in monasteries. The formal content was religious texts and tracts the teaching of which resulted in literacy and moral virtues for the learner. Because religious studies involved standard facts that needed no new discovery, there was no interest in research in this area. The informal content of monastic education supplemented religious knowledge with secular and practical knowledge in whatever trade or profession the individual monk–teacher was knowledgable, e.g., arts and crafts, medicine, carpentry, astrology, etc. But in all such subjects the knowledge imparted was within the bounds of tradition, and the teacher's wisdom had to be revered. Pupils who deviated from the teaching were disowned by their teacher.

But traditional education was gradually replaced by modern education based on the Western model after its introduction by King Chulalongkorn at the end of the last century. It is this nontraditional education that accounts for the present condition of research in Thailand. Because modern education based on the Western model was secular school education, and especially in modern knowledge of the West, there was no ready answer to the problem of modern education in the old tradition and a search was made to find an appropriate model for Thailand. The educational patterns of Europe were studied, but, more significantly, the educational system of Japan was also investigated and compared with Thailand so that when the decision was made it could be said that research had been done and the results of that research had been applied.

The same practice was also observed in other areas of modernization, and this was in line with the research tradition in governmental matters when new problems required study before decisions were made. Whether or not this kind of policy-oriented research in administrative matters meets academic standards of scientific investigation is not questioned here, but it is, nonetheless, a research tradition, and one would expect to see this continued in the administration of the educational system. This should be considered at two levels: that

of the ministries and departments concerned with education and that of schools and colleges.

Administrative Research

In the course of routine administration, reliable facts and figures must be compiled to formulate accurate budget forecasts, personnel requirements, etc., and policy decisions should take these data into account. But this routine practice is not necessarily a research activity, because policies may be predetermined or decisions may follow some favoured models that are accepted as the ideal goals without much concern for other local factors. In education, this means that once Western-type education is accepted as the ideal model, then other related forms and practices are also adopted for planning and implementation. Because administration is centralized and a uniform national standard must be followed, local needs and desires may be overlooked and research on local conditions beyond simple statistics may be considered unnecessary. In a strongly bureaucratic structure under autocratic administration, problems and their solutions may be determined solely by individuals in positions of power and policies and programs laid down and implemented following a familiar formula. If specific research activities are not called for, it is because the decision-makers believe that they already know all the facts, either from their own previous work experience or from the routine reports and information. Because senior administrators usually have had foreign education in the favoured system or have had considerable working experience locally, in the less-than-democratic system of government, policy decisions and implementation plans can be made quickly without the benefit of detailed data collection and analysis that serious research usually demands. After the introduction of parliamentary democracy in 1932, policy guidelines were taken from parliament as long as elections were held. Generally, however, it was a combination of decisions from elected representatives and an experienced, centralized bureaucracy that both felt they knew what was good for the population and didn't see the need for further scientific research.

The situation changed somewhat after World War II when more officials obtained advanced education and training abroad, this time mostly in the U.S., and returned to serve in various positions in the administration. Foreign advisers, again mostly from the U.S. in its bilateral aid agreement, as well as consultants from the UN and other international agencies who were more familiar with and more demanding of research work in support of policy planning, worked with their Thai counterparts with similar backgrounds and promoted research within government departments, often with the assistance of foreign funds. The creation of the National Research Council (NRC) by the government in late 1959 emphasized the administration's recognition of the need for a research contribution to national development. In the 1960s many government departments set up their own research units in support of administration. The Ministry of Education (MOE), and later the National Educational Commission (NEC), created research divisions to work on problems of curricula and syllabuses, tests and supervision, education policy and administration, etc. Research topics were closely related to the specific functions of the departments with narrow focuses on teaching and learning methods and materials. Only recently has the NEC tried to encourage broader research areas to include various social science disciplines to investigate social

and economic settings of education beyond the familiar pedagogical techniques. In the late 1950s, universities, all state owned, came under a different administration separate from the MOE but the research function of this administration was weak during its affiliation with the Prime Minister's Office until the Bureau of State Universities was set up in the early 1970s. Even now, however, research for this administration is limited to institutional research.

Academic Research

School teachers, even in the Western model of education, do not do research, but university professors, in the Western tradition, are expected to. Academic research, in the early days of Thai universities, was minimal and was not required or expected of teachers. (The first Thai university, Chulalongkorn, was founded in March 1917.) The early perception was that once university teachers had been trained abroad (more in Europe and less in America before World War II, and the reverse thereafter), with the Western kind of knowledge being accepted as the standard, their main function was simply to impart this knowledge to the students, with the Thai language as the medium of instruction. As long as there were only undergraduate programs, which, by tradition, did not require research and theses, basic standard knowledge could be gleaned from foreign textbooks. Apparently, the teaching philosophy carried on the traditional Thai theme, because the teachers only passed on the accepted standard truths formerly derived from the classical Eastern origin but now from the modern Western source, and there was no real need to discover any new truths to dispute the standard ones. True, some research was done by local scholars and not necessarily those who were teaching in the university, but this was from personal inclination and curiosity for knowledge, because research work was not mandatory for tenure and promotion. University teachers were (and are) government civil servants who were given job security very early and were advanced by their seniority and job performance.

This situation began to change gradually after World War II when more university teacher–apprentices returned from their studies abroad with more awareness of the need for research in the university. Research began to be mentioned as one of the formal functions (teaching, research, community service, and cultural promotion) of the university in the statute of any established or new university; because all universities are state owned the charters usually contain similar clauses. The second-generation staff members began to demand research and academic performance instead of seniority and job performance as a condition for academic rank promotion. But, in practice, the university continued to be teaching oriented, the budget was strictly for teaching purposes, no research funding or leave was officially provided, and research performance was not counted in job evaluation for annual promotion. Capable and potential researchers looked for funding from external sources, usually foreign-aid agencies and foundations interested in local research data. Some faculty members were officially requested and seconded to assist in the research work of other government departments; others without such formal arrangements undertook commissioned research in their private capacity without explicit official knowledge and approval. Some academic officials openly formed private consortiums to do research, first with foreign funding and later with local support.

Obviously, researchers in Thai universities living on meagre government salaries (a half or a third of the pay in the private sector for persons of comparable ability) and working under bureaucratic constraints would have no other way to do research but in the manner just described. The university authorities at all levels were also aware of such limitations, and, therefore, on most occasions, took no action against those who engaged in this kind of research. Private research of this type usually resulted in some form of extra income for the researcher, which caused resentment among colleagues who had no access to such opportunities.

In 1974, the Office of University Affairs (formerly the Bureau of State Universities) introduced a new regulation for academic rank classification that required, as a minimum condition, some publication of academic work for promotion from instructor to assistant professor (in the form of journal articles and classroom materials), to associate professor (in the form of a textbook or a research report), and to full professor (in the form of a textbook and a research report). This was the first official incentive for academic research, but it was adopted without a corresponding adjustment in the official budget or teaching load. (Some institutions with extrabudgetary sources of income, either from their own private endowments or from foreign assistance, could provide some funding for this research, but the majority of universities and departments were not so privileged.) Those seeking promotion below the rank of full professor could submit other types of work instead of research work, and those few who reached the full professor rank could submit research results from any source of funding and without any relation to their regular work. This situation worsened when more people reached the stage for their final promotion that demanded research as well as other publications.

In 1978, the Budget Bureau finally agreed, after persuasion from the universities, to set aside a fraction (2–3%) of the university annual budget for research expenditure by faculty members. (Previously, such a sum, although allocated, was strictly earmarked for graduate thesis research.) However, in addition to the inadequacy of the allocation, there were also the strict financial regulations and procedures that complicated the request for and expenditure of research funds from the official budget. It also allowed no honorarium for the effort. As a result, persons with access to extrabudgetary sources of funding did not bother to submit research proposals for official funding. (This was also the case with grants from the NRC, which were available to university faculty and student researchers from the early days of its existence. Such grants were sought after by those who had no alternative source of funding.)

Characteristically, research in academic institutions, among students and the staff, usually lacks a clear focus and direct relevance in relation to the actual problems encountered in education that confront a developing country. As long as students' dissertations represent only research training exercises modeled on the teachers' own training experience, and the staff's research work only fulfills some promotion requirement, the tendency will be to choose only those topics that can be investigated quickly, individually, and economically (considering the lack or inadequacy of research funds, especially from the official sources). If field data are needed, the subject population and field location are taken from the classroom, school, or campus, etc. so the spread of the population or coverage of the site will never be comprehensive. Because the research administrative structure in virtually all academic institutions continues to be weak, academic research has not answered the need of ministerial practitioners.

Thus, the two traditions of research on educational problems, that of the ministerial agencies and the academic institutions, have, so far, run parallel to each other. Although some individual academics may have joined research projects of the ministerial agencies, this has had no noticeable effect on the general direction of academic research toward the common problems of education that must be solved. As long as academic research follows the laissez-faire policy that stems from a strong insistence on the individual exercise of academic freedom and an ineffectual organizational structure for research administration and budgetary support, most of the academic research will have little practical value for the developmental needs of the educational practitioners.

What is also lacking in both research traditions is the interdisciplinary approach to research problems. Although this may not be uncommon, because of the strong single-disciplinary tendency in conventional academic training and research practice in most advanced countries on which the Thai practice has been modeled, it means that many education problems may not be solved by increased research activities that are of a single-disciplinary formula. No amount of interaction between the ministerial research units and university faculties and institutes of education, without the involvement of other social sciences and humanistic disciplines, can develop solutions for the many problems that challenge the administration of national education and that arise from the wider social, cultural, political, and economic contexts of development.

Problems in Education

The Educational Reform Committee, set up by the government in 1975, prepared a report detailing the problems that existed in the Thai educational system in the early 1970s. The changing social conditions and political ideas of the time suggested the need for reform in the national educational system. In the report, released in 1978, this need for reform and the following related problems were listed:

- The formal school system was not suitably integrated and was not equitably budgeted among its various levels. The curriculum content was more academic than practical. The content of each level was not clearly defined and not properly coordinated with the others.
- Nonformal education, necessary for the majority of the population because only primary schooling was compulsory, did not receive due attention and was not related to formal education.
- Mass media communication could not be effectively used to serve the purpose of education.
- Teacher training was more quantitive than qualitative, and teachers were not effectively deployed. Qualified teachers were in short supply for rural schools, because there were no incentives for them to go into the rural areas. There were role conflicts within the National Council of Teachers where individuals not only had to fulfill their roles in the administration but also had to defend the rights of the teachers who were subject to the decisions made by that administration.
- Many of the educational facilities at all levels, except at the teacher-training level, were provided by the private sector, but with an unequal distribution in terms of quality, which created a serious problem in quality control. Because the supply of government schools could not meet the public demand, private schools continued to fill the gap.
- The administrative system of national education lacked coordination in

its various ministries and departments despite its severely centralized and bureaucratic structure. Personnel administration and pay differed from one organization to another and even within the government sector.

- Poor planning resulted in the misallocation and waste of resources.
- The National Education Plan had been supplemented by numerous ad hoc laws and by-laws to meet short-term needs. This complicated and confused the long-term adjustment plans needed to meet changing conditions.

To alleviate these problems, the new National Education Plan of 1977 was formulated. Then in 1981, the Fifth National Economic and Social Development Plan (1982–86) identified other problems in the area of education:

- The population structure and educational administration. As a result of the successful family-planning program, the 1st-year primary school enrollment is expected to fall from 1.36 to 1.32 million pupils during 1982–86, but more pupils are expected to continue beyond primary schooling.
- The quality of education. Although more schools have been provided at all levels during the past 2 decades of the four national development plans initiated in 1961, the teacher–pupil ratio, in most cases, is still below the standard, teachers' qualifications do not meet local needs, and quality has not been commensurate with quantity. There is also a difference in the quality of education among urban and rural schools, and primary schools in remote rural areas are the most disadvantaged. The new school curriculum, recently introduced to fit local conditions, still lacks suitable teachers and facilities. Vocational and university education have spent more on improving physical facilities than on promoting quality teaching, research, and community services.
- Equality of opportunity. There is obvious inequality among the rural student population because of the poorer social and economic conditions and uneven distribution of schools and educational facilities compared with the better-off urban student population.
- Educational provision and the labour market needs. Schools and universities continue to produce personnel that suit the needs of government services better than those of the private sector. There is an oversupply in many of the social sciences and humanities disciplines as well as in some branches of natural, agricultural, and engineering sciences, but an undersupply of doctors, nursing and public health personnel, and graduates for work in natural gas industries.
- Allocation of resources and educational administration. Almost 80% of the government budget for education is spent on salaries and physical facilities, with little left for improvements in overall educational quality. Private and local resources have not been effectively involved in financing education. The lack of coordination in the national educational system results in the duplication of work and the inefficient use of resources. Better coordination of academic standards at the central, provincial, and local levels is needed.

The two sets of problems identified represent the latest and current concerns of the authorities responsible for the planning and administration of national education. It is against these problems that we can examine the scope and nature of educational research over the last 2 decades.

Educational Research in the Ministry and the University

A research coordinating committee was set up in the MOE in June 1969 to: (a) suggest problems for research by the research units of various departments

of the Ministry; (b) disseminate significant research results, both domestic and foreign, among departments within and outside the Ministry; (c) provide information to public inquiries on the research work of the Ministry; (d) give advice and service to the Ministry on educational research; and (e) promote the appropriate use of research results.

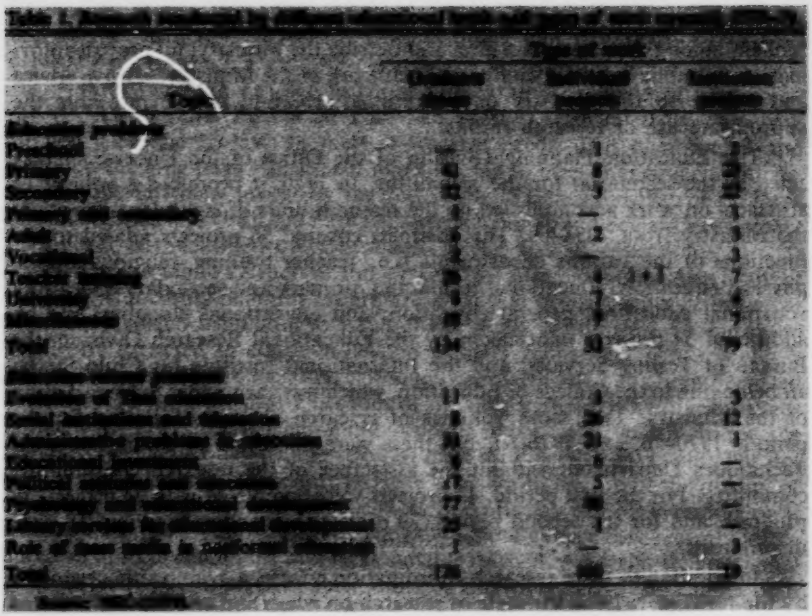
The Education Planning Division of the Office of the Under-Secretary acted as the secretariat for the committee. In 1970, it produced a volume of abstracts on work accomplished by the research units of eight departments of the Ministry from 1954–69. The abstracts covered 56 projects related to the functions of the various departments (i.e., teacher training, religious affairs, physical education, educational techniques, primary and secondary education, vocational education, general education, and educational planning) and an additional 54 projects undertaken by the Educational Research Division, the Bureau of Testing Services, and the International Institute for Child Study, all belonging to the College of Education, which was then under the jurisdiction of the Ministry. Two more volumes of research abstracts followed for the periods 1970–76, and 1976–81, but these were published by the Educational Techniques Department without the assistance of the research coordinating committee. For the first period, 42 projects were completed with 24 projects in progress, and for the second period, 79 projects were completed and 18 were in progress.

In addition to these research coordination efforts, a symposium organized by the NEC in 1979 on the state of research on education and research related to education during the 1970s brought together an impressive collection of reports on completed research, which served to document the amount of work that had been done recently in the field of education. A brief summary of the various categories of problems that have received attention, and the types of individuals or institutions involved in the production of those research projects, suggests the general condition of educational research during the 70s.

Eight clear-cut categories of education problems had been researched, plus a miscellaneous category (covering such topics as teacher training and school curricula for hill-tribe education, village newspaper reading rooms, radio programs for primary school leavers in the provinces, and programed lessons for military, nursing, public health personnel, etc.) (Table 1). The bulk of the work was done as graduate theses in university departments of education, some by individuals in the teaching profession, and some by institutions (mostly work units in the MOE and NEC and a few teaching departments in universities and teacher training colleges); this work was usually funded and suggested by the administrative authorities to answer more clearly focused application needs.

Education-related problems of research work (Table 1) consist of studies by persons in the social/behavioural science disciplines other than education but having a bearing on education-related problems outside the pedagogical confines of teaching, learning, testing and measurement, curriculum development, etc. A summary of selected works published by the NEC taken from the more substantive reports is listed in Table 1.

From both categories summarized in Table 1, the general picture of current research in education is that graduate research, being part of the training exercise, will continue to appear in a substantial amount, but the range of problems that it covers and the direct relevance for policy application must remain problematic, because the primary objective for this type of research is for teaching and training purposes. Expediency and economy are also the



deciding factors for the choice of topics and subject populations because research students need to have easy access to the data on the campus or in the schools they have attended or taught at before taking up graduate studies. Such research endeavours may add useful local materials for teaching purposes but are less likely to do so for systematic policy planning. Students may obtain some small graduate research grants from the official budget of the graduate schools and from the NRC to cover paper and typing costs.

There has, however, been a noticeable amount of research directly on educational problems carried out in the form of institutional projects. The institutions responsible for such projects usually belong to the MOE or NEC with very few originating from the teaching departments of the universities. Institutional projects are very often team projects involving several persons in the same work units working on specifically assigned topics to answer policy and administrative needs and are being supported by official or outside funding channeled through the responsible authorities.

Of the remaining individual projects, research is usually a private undertaking to fulfill promotion requirements and, therefore, comes from faculty staff in teaching universities. The more qualified and competent researchers often work on personally negotiated projects with external funding, e.g., foreign foundations and agencies, and to a lesser extent local public or private organizations, and very likely without official knowledge and authorization. The results of such work are not used internally for teaching or policy purposes, although they may eventually be applied by the original sponsors of the research. Researchers with less contact with external sources for extensive funding compete for the more limited support from the university budget and consequently, must choose their research topic according to their source of funding.

This arrangement does not lend itself to comprehensive topics and team efforts, and the results can become too fragmented to be of use in policy and planning.

The importance of research related to education produced by persons in the social/behavioural sciences disciplines other than education is still uncertain. These works may simply touch upon education as a suitable exercise in the training or practice of such disciplines as history, public administration, sociology, anthropology, economics, political science, psychology, etc., which might not be followed up with more in depth study. This is especially true of graduate theses, but could also be true of individual and institutional efforts. Although it is significant that such contributions from the social/behavioural sciences disciplines can be quite useful and, in fact, indispensable for policy and planning of education beyond classroom teaching and learning techniques, unless some clear direction and organization exist to utilize properly such research in the service of educational planning and administration, the information gathered so far could be misleading. The general working conditions for all the three types of work produced by graduate students, individual faculty members, and institutions are similar to those that are practiced among the strictly educational researchers.

Because problems in education are not limited to learning and teaching techniques found only in the classroom but also involve the organization and administration of the school, its personnel and financial resources, the relation of the school and the community, teachers and parents, the educational system, and the economic, political, social, and cultural systems in the larger context of the nation and possibly beyond, etc., both kinds of research, on the pedagogical techniques in the classroom as well as on other societal factors affecting the provision and performance of the educational system, are needed. However, without some idea of the problems facing the nation and the availability and peculiarity of the resources, researchers cannot, from their uncoordinated efforts, provide relevant solutions that would demand respect and deserve support from the limited resources available in a developing country. With this information and better coordination, institutional researchers working in operational agencies would be more conscious of specific, practical problems to which their research could be directed than their academic counterparts at the faculty and the student levels, especially those who follow too closely textbooks and theories derived from foreign experiences.

Researcher Skills

A professional researcher is expected to possess certain skills specific to educational practice, certain social disciplines, research methodologies, conceptual skills, analytical skills, and image management skills. (Shaeffer 1979). These skills concern education studies (subject matter) and research methodology. Lack of one or the other results in incompetent educational researchers. The number of educational researchers must be significantly smaller than the number of educators or research technicians; for example, only 24% of the staff members in Thailand's various faculties of education are educational researchers. This percentage should apply, more or less to other academic institutions and government agencies as well.

Analysis of data pertaining to the number of educational researchers yielded two different groups. One group consisted of those doing research to fulfill the academic degree requirements. By counting the number of theses

and dissertations registered in libraries from 1971–79, it was estimated that students in the faculties of education and teacher colleges produced about 1500 theses, an average 150–200/year. The second group was identified, by counting the number of educational researchers who presented their research work at national symposia, about 800 in all. In Thailand, therefore, there are about 1000–2000 educational researchers.

The micro study on researchers' characteristics, both individual researchers and institution research activities, was derived from questionnaires sent to educationists throughout the country.[1] The questionnaire for individual researchers was designed to gather data concerning an individual's research skills and performance. In the first part of the questionnaire the researcher was asked to submit his or her best research work completed to date and to present it within the provided frame of reference. The second part contained questions mostly about the researcher's specific skills, such as research experience, educational background, aptitude to do research, and ability to complete a project. These questionnaires were sent out to educational researchers throughout the country and most government researchers or personnel involved in related research activities. The questionnaire for institutions was designed to collect data on how well equipped each institution is for research activities, such as research administration, number and qualification of researchers, budget, and library and research facilities. Seventeen different institutions were randomly selected: eight faculties of education in various universities (four in Bangkok and four in the provinces), four teacher colleges (two in Bangkok), two ministerial agencies (MOE and NEC), and three provincial educational supervisory units.

To receive qualitative data regarding the research environment and to observe as well as to collect supplementary data, an interview schedule was arranged to gain information on the particular problems and solutions of individual institutions. The questions related mainly to research policy, purpose, and plan at the institutional level. Another major concern was about problems encountered by the individual researcher, such as selection of research topics, sources of budget, and research administration. The final concern was about the amount of contact and communication that exists at both national and international levels. Staff of the 17 institutions already mentioned were interviewed.

Available records and documents at various government offices such as the MOE, NRC, NEC, and the Office of University Affairs (OUA) were the main sources of information. The data gathered also included the number and educational background of individual researchers registered at NRC, university staff research work collected at OUA, and research abstracts presented at the First National Symposium on Education and Related Education Studies organized by NEC.

Of the 210 respondents to the questionnaires, the majority were women. The age of the respondents ranged from 25 to 54 years with 60% between the ages of 25–44 years. If these figures are representative of the whole population of Thai educational researchers, then Thailand seems to have accumulated more experienced researchers because this group of researchers would have produced much more research work than in the past and many would have

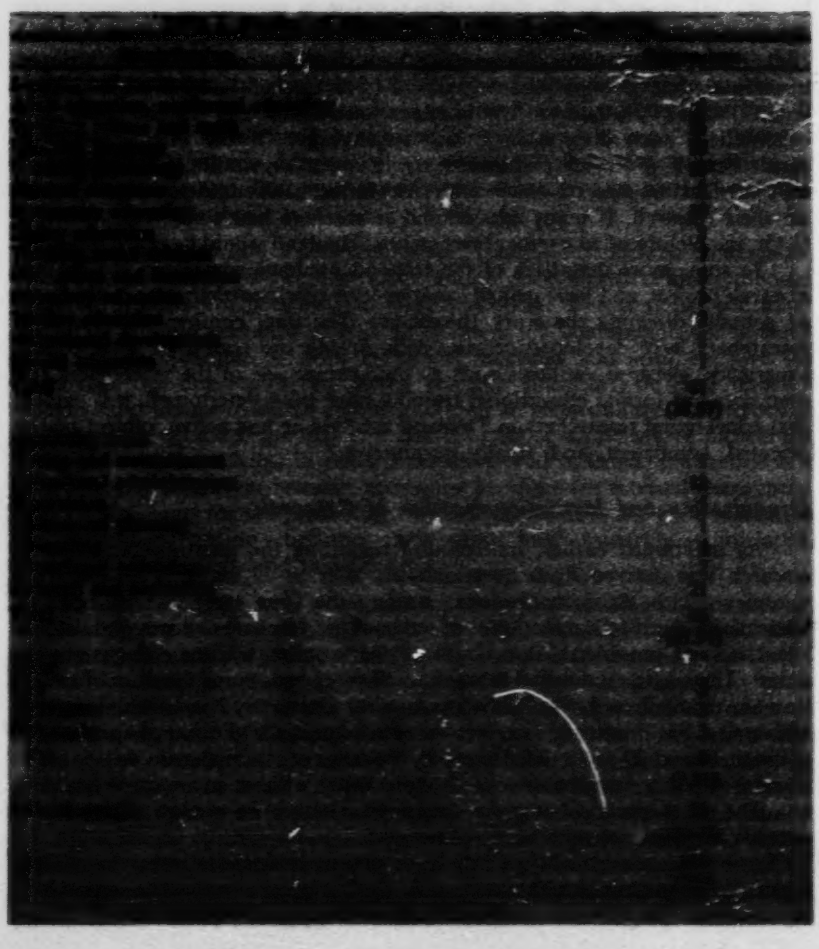
[1]Copies of the questionnaires sent to the individual researchers and the institutions are available from the authors.

participated in research work for at least 20 years. Because there are more experienced researchers, Thailand is beginning to produce more and better-researched work.

About 71% of the respondents have an MA degree and 74% received formal research methodology training before obtaining their degree. Most MA degree students are required to do theses directly on their subject matters. Therefore, most possess certain research skills developed under the supervision of competent thesis advisers.

Respondents indicated 30 areas of specialization. Those most often mentioned are research and evaluation and teaching methods in various subject areas. The 30 areas of specialization are divided into two groups: learning and instruction in various subjects and supporting areas. About 39% of the respondents have subject-matter backgrounds and another 22% have supporting area backgrounds (Table 2).

If different specializations indicate different interests and expertise in



doing research, then these groups possess skills specific to certain educational practices. Moreover, many people mentioned research and evaluation, signifying that they possess specific skills in research methodologies and analysis learned at the time of their research training and in academic institutions.

The scope of the research undertaken determines the degree of specialization, the number of years of research experience, and the level of competency needed by the researchers involved. The research experience of the respondents varies in terms of years of experience, the methods known, roles of the individual researcher, and the number of research projects in which the researchers have been involved. The data also showed differences in the number of research projects completed by individual researchers and ranged from 1 to 15 research projects per researcher. However, about 61% of the respondents had taken part in only one to three research projects. Research experience can be accumulated through participation in a number of research projects and through several years spent doing research. Data extracted from the samples show that about 51% of the respondents have been doing research for 1–6 years.

As mentioned earlier, education studies is an interdisciplinary area. Educational research performed by a researcher with a multidisciplinary background should differ theoretically from that of a researcher with a single-disciplinary background. About 13 out of 15 researchers had a BA in education studies, about 72% had an MA in education studies, and the rest came from other fields such arts, science, and psychology. Of the doctorate degree researchers, 72% already possessed a BA in education studies, and 86% had an MA in education studies, which reflects the influence of educational background on their research. If many educational researchers had come from different fields, the picture of educational research in Thailand would be much different.

In sum, more than 81% of the respondents have completed at least one research project, and have gained experience in either participating in the work or actually directing the work themselves. The data confirm that the Thai researchers have developed certain skills during the course of their project experience. Because variables such as the average age of the researchers and their areas of formal educational training have been determined, it is evident that educational researchers in Thailand are "young and active, subject-matter oriented, competent, and; finally, productive."

Organization and Institutionalization of Research

As mentioned earlier, information regarding the institutionalization of research was derived from questionnaires sent to 17 institutions and from interviews with those institutions. Among the four categories of research institutions (university faculties of education, teacher colleges, ministerial agencies, and provincial educational advisory units), teacher colleges are the oldest. They were established more than 40 years ago. Some faculties of education are relatively old, like Sri Nakharinwirot University I and Chulalongkorn University, but provincial faculties are much younger. Ministerial agencies are between 16 and 29 years old. However, the dates of establishment do not imply research capacity, because some institutions began without any research function.

The most practical way to determine whether or not an institution is capable and productive in terms of research is to examine its organization. An institution that sets up a body, a division, or a committee for research activities expresses its concern for research, and, obviously, recognizes the importance of research. The division or committee will supervise, plan, facilitate, and

conduct research work within the institution, but to be more accurate, a research division can function better than a research committee. The MOE, NEC, Chulalongkorn University, and Kasetsart University are institutions that all have a division or a committee with research responsibilities. The MOE and the NEC seem to be the most efficient in terms of production during the past 5 years. However, education faculties, which are supposed to function as reservoirs of research work, do not always maintain detailed records of their research activities.

The genesis of an institution determines its function; for example, at Sri Nakharinwirot University I, the International Institute for Child Study, now called the Behavioral Research Institute, was founded in 1955 and has been conducting research work since its establishment. Compared to the Faculty of Education at Sri Nakharinwirot University I, the Institute is much more productive in terms of research activities.

The size of institutions varies from a small staff of three as in the case of the provincial supervisory units to a large staff of 157 as in the case of Chulalongkorn University. Not all faculty staff members conduct research, however. Most institutions have the largest number of researchers with MA degrees, but all institutions except the provincial supervisory units, possess at least one doctoral researcher, and no central university has a BA researcher. If we consider the researchers' background training, those who specialize in education make up the largest group. Social scientists also participate in educational research, but as a minority, and researchers with humanities background are scarce.

There are four kinds of activities for the promotion of research: conferences, symposia, seminars and meetings, and training. At conferences and symposia, research projects are presented to large audiences. Two national education research symposia were held by NEC in 1979 and 1981 and roughly 440 research studies were presented at both symposia. Meetings and seminars give the researcher the opportunity to define research problems, develop research designs, and discuss research results and their implementation. Two types of training are organized: the first is a kind of staff development, to furnish the personnel with knowledge in research methods and statistics; the second is a service that a competent research institution arranges for external researchers. The arrangements for the promotion of research activities are good indicators of institutionalization, because they show how research is initiated, promoted, conducted, and implemented.

In terms of links with other institutions, there are four main kinds of relationship that exist concerning research activities: financial support, technical assistance, research cooperation, and the exchange of information. Provincial institutions have a considerably passive role in their attachment to other institutions because of their lack of inputs and competency to conduct research. Ministerial agencies and education faculties have more communication with one another. Of the foreign agencies, the international organizations are the most remarkable in terms of their links with other institutions. Provincial institutions also have some links with foreign agencies. It is also quite common for some faculty members to join the research committee established within the Ministry, however, the reverse is rare. Academicians are, therefore, valued and respected for their technical and theoretical assistance to researchers and practitioners.

Inputs

Because of the technical progress in statistics, sophisticated analyses, such as multivariate data analysis, are desirable in research operations. Such analysis, however, necessitates the use of a computer. Research institutes, have become increasingly aware of the need for computers or access to computers for data processing purposes, especially in quantitative studies. Computers also facilitate the compilation of a data base, which is necessary for researchers as well as planners. Because the computer partly determines the level of sophistication of research work, it becomes a practical indicator of institutional capacity in terms of data processing. In general, most institutions have access to computers and computer equipment. The National Statistics Office (NSO) provides an IBM 370 for all governmental agencies to use free of charge. However, it is inconvenient because of the length of time it takes to obtain a printout, so some institutions prefer to pay for computer time and service from nongovernmental agencies. Provincial institutions have a disadvantage here, because most computer centres are in Bangkok.

Another problem regarding data processing is the lack of well-trained assistants for coding and data tabulation. Most of the time, research institutes employ clerks or students to do the job. Clerks are preferred but are also needed for other clerical work, and students have not shown much interest in this part-time work, with the result that the data are improperly coded and tabulated and, consequently, spoiled.

When the data are prepared for computer analysis, the use of statistical packages has become common. Some research institutes have trained their highly skilled computer technicians in data preparation only to learn that such programs did not justify such sophisticated knowledge. Consequently, the preparation becomes a waste of time and money. New technicians, however, must still be trained to keep up with new technology. To cope with such technological progress, many investigators and project directors must become familiar with the packages and their use to determine data analyses according to the packages and to cooperate with the computer programmer effectively.

In qualitative analysis, researchers who would like to explore the computerization of ethnographic data, for example, field-note coding, encounter a language problem, because the language used in the machine is usually English but the Thai language is used in the field notes. Translation creates additional work and increases the chances of misinterpretation.

Texts, Journals, and Library Services

All institutions, or the organizations to which they are attached, have a library. Some universities centralize and increase the capacity of their main library and, consequently, reduce faculty libraries; Sri Nakharinwirot University I is an example. In an effort to determine the competency of a library to facilitate its researchers, the investigators provided a checklist of the five most popular Thai educational journals and the five most popular English-language educational journals according to previous research findings. Three of the most popular English journals are "Review of Education Research," "Journal of Education Review," and "Journal of Research and Development in Education." Chulalongkorn University and Sri Nakharinwirot University I and II have all the 10 journals listed, whereas the Silpakorn University Faculty of Education has none. There are also about 100 other journals mentioned by some libraries. Researchers have more access to local journals because they are

inexpensive and easily available. These journals also reflect local, current issues and provide researchers with related literature within their own cultural context.

Supporting Staff

Most institutions do not know the exact number of their research staff. Actually, there is no clear-cut distinction between supporting staff for research activities and those for other office or clerical work. This distinction is important if research capacity is to be increased. Institutions do, however, develop their staff by sending them on training courses or organizing in-service training within the institutions, and some can even send their research personnel to act as resource persons for other institutions. Organizations that arrange training programs for researchers include NRC, NSO, and the National Institute of Development Administration (NIDA). The NEC and MOE organize specific training in education research, as does the Association of Social Sciences Researchers of Chulalongkorn University.

Experienced field workers are rare resources in the Thai research environment. Many MA graduates in research and evaluation have no field experience and need in-service training before they progress to the research sites, especially in rural areas. Some experienced research assistants are employed at a special pay rate, in large-scale projects supported by foreign funds. They are not interested in working in the comparatively low-paying government projects. Therefore, research projects with local or governmental funds that offer only the low official salary cannot attract such competent staff.

In certain types of research, like anthropological studies, the researcher is the most important instrument in data gathering, and experience is needed. Usually, a capable junior researcher will be ready to conduct his or her own project after 2–3 years of apprenticeship under a senior researcher. A novice researcher has no firsthand experience and, therefore, does not know what decision to make when confronted with unfamiliar situations. Qualitative research, in particular, requires experienced field researchers.

There are more and more training courses in research and statistics, and trainees are furnished with various methods of statistical analysis but still do not know how to do much research beyond the survey technique, such as how to define a realistic research problem, how to make the research findings match with reality, and how to interpret the procured statistics meaningfully. The best training seems to be the apprenticeship of researchers under senior fellows.

Research Funds

The lack of research funds is a crucial problem of many institutions, especially those who do not have a specified budget for research activities. Some solve the problem by using extrabudgetary sources like institutional endowments or seeking external support.

Among the 17 institutions, NEC receives the highest amount of funding and Chandarakasem Teacher College gets the lowest (U.S.$95 000 vs. U.S.$750) in 1980. All institutions have a governmental budget for research activities, but the amounts vary. Ministerial agencies receive a lump sum because their primary responsibility is research. Most of local funds derive from the government. Only Sri Nakharinwirot University II, Songkla Teacher College, NEC, and MOE show records with foreign financial support. In fact, other institutions also receive foreign aids but the resources come to the individuals; therefore, no record is available.

Bonding of Research: Organization, Networks, and Interaction with Policy

A presentation of the basic information and inputs for research activities can only reveal a piecemeal picture of all that research involves, but from the interviews conducted with administrators and researchers, more insights were possible into the organization and networks of research in Thailand. However, facts about the interaction of research and policy have come mostly from investigators' observations, past experiences, and direct involvement in the research policy process.

Research Organization

Although all institutions have articulated their needs and given their encouragement for research work, none of them has clear and concise policies, targets, and objectives for research, however, determining research policies and plans in Thailand is not an easy task. Because of limited resources and unexpected educational phenomena, research agendas are frequently modified, changed, or even cancelled.

Research divisions of ministerial agencies and faculties of universities will only produce optimum research output if all those elements pertaining to research are effectively bonded together. A strong research administration can provide this bonding. Research divisions in government departments have an established administration with a budget and personnel designated for research. Full-time researchers can devote their efforts to research activities facilitated by equipment and other necessary materials. However, ministerial research still has some obstacles that hinder its potential capacity:

- A frequent change of administrators at the division level and their often irrelevant qualifications in terms of their research background can slow down the progress of research. The MOE, for example, has had eight directors of its research division within 10 years.

- At the NEC, there is a high turnover rate among researchers because of limited promotion within the bureaucracy, and new researchers need time to be properly trained. When there are many research projects being conducted simultaneously, the number of available assistants is inadequate. Also, qualified researchers who have specialized in economics and computer science, for example, are rare.

- Because of the complicated bureaucratic procedure, research budgets are inflexible in many ways. Budget proposals are often cut by the Budget Bureau, directly affecting the original design of a project. At the NEC, the sample size of a research project must be reduced to cope with the reduced field-work budget. Furthermore, budget regulations are rigid and sometimes discourage researchers. All ministerial research agencies suffer from this. Researchers who can find other financial sources prefer to avoid the restrictions included in accepting government research funds.

The conditions under which research is conducted in the universities are somewhat different. As long as the regular work of the staff is strongly teaching oriented and research activity continues to be optional without any clear-cut policy and adequate logistical support, then all the research-related institutional factors, such as general policy statements, faculty research committees, the provision of a research budget, availability of office equipment, possibility of research sabbatical leave, and recruitment of highly qualified personnel, are

only potential, but not actual and operational, factors for research. At present, the university administration cannot reconcile, first, the academic freedom philosophy and the laissez-faire policy for research that fit in well with private research undertakings from undeclared external sources of funding and, second, the need for some clear-cut research objective, policy, and plan that will meet the developmental needs of the faculty and the community and at the same time achieve optimum utilization of personnel and all other potential inputs for research.

In brief, the following factors are mentioned as major obstacles to the greater coordination of research:

- There is no administrative body for research activities. Only at Chulalongkorn University is there a deputy dean for research. In other faculties, there are either no undertakings at all or the few that do exist receive very little attention. Consequently, the faculty members receive little encouragement to conduct research, from lack of financial, technical, and moral support to inadequate libraries and other facilities.
- In most faculties, especially in regional universities like Khon Kaen, Chiang Mai, and Songkla, and also in all teacher colleges, lecturers have a heavy teaching load of 10–15 hours/week. They are torn between two significant functions: to serve the newly extended postgraduate studies or to conduct research work for their own promotion. Sabbatical leave exists only in principle and cannot be applied in such circumstances.
- Most academic research has no separate, ongoing research budget like ministerial research has. However, even with the small amount of funding that it does have, it is still subject to the same rigid regulations of government budgets, and other sources of research funds are rare.
- Cooperative research is minimal. Lecturers prefer to work individually in fragmented research projects, because at least these projects will be recognized as individual undertakings by the university for promotion. Thus, cooperation will only complicate the recognition of individual efforts.
- Isolated as they are in the academic world, some lecturers cannot define research problems that are relevant to educational realities.

Networks

Apart from the internal relationships within a research agency, its structural relationships with other institutions indicate effective bonding as well. This external bonding is more complicated and less visible. It can mean established relationships between one research agency and another and it can also mean conceptual integration of education with other disciplines. There seems to be minimal institutionalization in this respect, and yet, few problems and obstacles are articulated by either administrators or researchers, which might indicate that they may simply be unaware that no institutionalization exists.

Ministerial researchers claim that their work is in considerable demand by other researchers, and is cited and published in local and occasionally in international journals. They are also requested to conduct certain research projects. However, they admit that administrators (for MOE) and planners (for NEC) do not fully understand or use their research conclusions.

The topics chosen for research in a ministerial agency like NEC come from various sources. At least, in the past, research topics were derived through four channels: from some brainstorming seminars organized by NEC; from the NEC Executive Committee deliberation; from the requests of operational agencies,

especially MOE; and from some individual teachers' initiatives (Ketudat and Fry 1980, pp. 85–101).

For the university, research topics are chosen according to the staff's interest. Deputy rectors for research activities and deputy deans in some universities like Chulalongkorn begin by setting a loose research agenda for the institution. They recommend some themes considered relevant for academic promotion or useful for national development.

The NEC seems to be more advanced than other research institutions in launching multidisciplinary research projects. Because of its function as a policy and planning body in education, NEC needs more information about the socioeconomic and cultural contexts of pedagogy. It conducts and also commissions multidisciplinary research. The establishment of a program to encourage social science research related to education in 1977 indicates NEC's commitment to multidisciplinary research. At present, 74 research projects have been funded and 43 are now completed through this program.

Ministerial agencies have their own journals to disseminate the results of their research activities. The size and character of the readership, however, is unknown. In the universities and teacher colleges, there seems to be no network of dissemination at all. After faculty staff conduct research projects of their own choosing and present them for their academic promotion, no follow-up action is taken.

In 1968 when Mark Blaug, a British education expert came to Thailand to conduct a sector survey study on educational planning, he was astonished with the existing research environment at that time as he observed: "I have been much impressed by three inter-related features of higher education in Thailand: (1) the almost total absence of research; (2) the heavy reliance on part-time teachers and the significant incidence of 'moonlighting' among university staff; and (3) the acute difficulties of recruitment, particularly in provincial universities" (Blaug 1968, p. 53). However, what Blaugh observed in that decade changed over time. Some information was inaccurate; for instance, there were some research projects being conducted during that period, but they were in Thai and information about that research was circulated mainly among the Thai audience. Now, there are fewer part-time teachers, and some regional universities have better-qualified staff even though the difficulties of recruitment still exist. However, very few researchers have included their research results in their teaching curricula, and those who have imparted their new-found knowledge to their students have been from the teacher colleges and not the universities.

Academic research, in other words, has no information system, because most researchers feel that they do not need to exchange any information or there is no information to be exchanged. Although most faculties in the universities and the teacher colleges do have an academic journal of their own, not many research findings have been published in an article form. The readers of those journals find that it is too "serious" or too "heavy" to digest such articles.

A little but praiseworthy effort is the informal networks of researchers in teacher colleges. Researchers in the same geographical region gather together from time to time to conduct some research projects considered relevant and beneficial to their region. They also correspond to exchange research information. Most of the costs of the cooperation are supported by the researchers themselves.

Research and Policy Interaction

The development of research findings into recommendations is a significant phase within the institutionalization of research. Usually, most findings have no operational implication and decision-makers need qualified advisers to offer them alternatives. In the research cycle, the decision-making process is frequently overlooked and researchers are expected to formulate proposals and offer alternatives within an unrealistic time frame. Researchers need sufficient time to reevalute their findings, formulate alternative recommendations, discuss their problems and solutions with their colleagues, and even to reinvestigate the data before good recommendations can be proposed. Ministerial researchers are more likely to produce proposals with operational implications than academic researchers, because of the ministerial researchers' functions, experiences, and closeness to the practice.

The creation of well-researched recommendations usually has more impact on policy and decision-making (Carron 1977; Psacharopoulos 1979; and King 1981). The study of the decision-making process at the NEC (which has the status of an executive committee) revealed that succinct recommendations from research work yield clear decisions and significantly affect the policy and operations of educational agencies. For example, findings and recommendations from five NEC and MOE research projects regarding secondary schools from 1976 to 1978 totally changed MOE policy for secondary education extension at the end of the 70s and the beginning of the 80s. Researchers consider such impact as their most significant reward. Because of their original function, ministerial agencies conduct more policy-oriented research, and, consequently, the interaction of research and policy is more frequent in the ministerial agencies than it is in the academic institutions.

Conclusion

Ketudat and Fry (1980) tried to analyze the relations among educational research, policy, planning, and implementation using the Thai experience. In their analysis, which focused on the research-policy linkage, they explained that a complex educational administrative structure and a pluralistic informal power structure characterized the Thai research context. Through their proposed tetrahedron model of linkages and various actual research projects as examples, lessons to be learned from the Thai experience are that "Thailand has experienced some success in building analytical educational research capacity and ensuring its utilization. Key elements in this success have been an emphasis on strengthening human capacities; judging political will in a timely, flexible manner; creatively utilizing bureaucratic forms such as committees; and remaining both politically detached and sensitive" (Ketudat and Fry 1980).

The statement shows that institutionalization of research in Thailand does exist, at least in some research institutions like NEC and MOE that are ministerial agencies and where the prime function is to conduct research for planning or for operation. Among educational research and planning institutions in Southeast Asia, the Centre for Educational and Culture Research and Development (BP 3K) in Indonesia and NEC in Thailand seem to be the leaders and to be the most institutionalized. Nonetheless, this does not mean that the whole research context is bonded closely together. Information in this section reveals that most research activities are still fragmented and individualistic. Research findings are not fully utilized or implemented. However, both researchers

and administrators have become more aware of this gap. Various remedies have been employed, e.g., the organization of national conferences to disseminate research findings, improvement of presentation skills of research findings, establishment of liaison units to evaluate research findings for decision-makers, arrangement of seminars to identify research problems and to seek ways to relate research findings to policymaking, etc. In the near future, ministerial research will be more institutionalized than academic research.

The Climate for Research

In the 1970s, there was a considerable improvement in the climate for research in education, thanks to the progress in research for planning and policy especially at the NEC, and the steady pace of work at the MOE. The new regulations that required research output for academic rank promotion in the universities in the latter part of the decade naturally encouraged research activities among the teaching staff in the faculties and departments of education.

Although research funds from the official budget continued to be meagre for university researchers, supplementary assistance could be sought from outside agencies, such as from the NRC annual research support and from foreign foundations and international agencies. No doubt, there are shortcomings in all these sources of research funding. Funds from the government budget carried conditions imposed by official accounting regulations that discouraged many potential applicants, especially those highly qualified persons with easier access to nonofficial sources that were more liberal not only with the amount of support but also with disbursement regulations. Although most foundations did not allow honoraria for the researchers, the ample funding given to the project more than compensated for this formal restriction. It is obvious that the better-qualified researchers with a wider connection among donor agencies enjoyed the most incentives for and benefits from research work, and the lesser-qualified or more junior researchers had to compete for the limited funding with stifling regulations from the official budget.

In this respect, administrative researchers, when compared with academic researchers, would feel less discrimination and inequity with regard to research funding and benefit. Because the work in administrative research units has a single objective and there is a unified direction, financing research activities from whatever source, official or foreign budgets, does not create a climate of confusion and uncertainty among colleagues as it does in an academic environment, which has a multidimensioned work activity — teaching, research, student affairs, community services, and administrative tasks — all of which are expected to be shared among the members of the department. A research opportunity that detracts a faculty member from other tasks and offers extra benefit, in terms of academic achievement or income or both, to some more than others results in an uneven and unfair distribution of the work load in other equally necessary areas of the faculty function. Much of the uncertain administration in academic research and the lack of some clear-cut research policy that have been detected in many academic institutions derive from this inability to place research properly in a total context of the multidimensional function of an academic organization, so that often research has been left to the individual's initiative in a laissez-faire kind of atmosphere.

This ambiguous climate for academic research is peculiar to Thai univer-

sities that are part of the Civil Service bureaucracy. On the one hand, bureaucracy everywhere is fraught with cumbersome rules and regulations, especially in the matter of budget and accounting, that can hamper the free flow of academic creativity. On the other hand, the university personnel receives the same standard salary rates as all other civil servants, and even though pay raises and promotions may involve a more flexible procedure than in other administrative units, the basic salary does not differ from the standard that uniformly applies to other officials. Recognizing the fact that a person of similar qualifications can earn twice or three times as much in the private sector, the only way to retain competent faculty members is to allow them a certain latitude in their extramural earning activities. Hence, there is no clearly controlled administrative policy and plan that might interfere too much with the individual's activities beyond the minimum requirements of official duties.

In this regard, efforts to promote academic research have been made at some universities more successfully than at others by supplementing the limited official budget from other sources of finance. Chulalongkorn University, which has its own endowments and private income, can give extra funds for research. But most other universities are not so fortunate and must seek research funds from external sources, mainly from foreign foundations.

Compared with the universities, ministerial research, although functioning within the same bureaucratic frame, fares better. Budget allocation for research appears to be more substantial because research is the main objective of the allocation, unlike research in the universities, which is subordinate to the teaching function, and the researchers work as a unit on the assigned projects directly supported by the budget. Although official accounting and disbursement procedures can be just as cumbersome, the researchers take this for granted as part of their work conditions, and do not complain like their counterparts in the universities. A more precise and directed policy statement to promote research can be made more effectively and corresponding measures to facilitate research can be taken more easily. There is less ambiguity in the research climate in such administrative units. The only complaint in the administration of ministerial research from the technical staff has been that senior administrators appointed to the research division may not always be technically qualified, and do not stay long enough to learn the job, which is not unusual in a large bureaucracy. However, the climate for ministerial research has improved much more effectively than that in many universities.

So far we have discussed only the internal climate of research within the organization, and must now turn to the general conditions that exist outside. Essentially, research work must seek facts and information to establish the truth of the matter. Certain matters that concern public interests may affect private interests, and certain truths may hurt. Researchers are not only constrained by their own research tools and methodologies to arrive at the truth, but also by the willingness and ability of the subject under investigation to supply facts and information. To the extent that there is no deliberate official censorship to suppress truth, it is still always possible that data collection in matters adversely affecting personal or group interests will be difficult. The Thai public at this stage are not yet fully aware of the need and value of research to offer full cooperation to supply information to all kinds of research. Sensitive topics such as attitudes toward government officials, personal assets and incomes, crimes and narcotics, etc. are automatically suspect when questioned, although these topics may lie outside the field of educational research. An

analogous list could be given for research in education that goes beyond pedagogic techniques and touches on finance and administration, school and community relations, leadership and authority, interest groups and power cliques, etc. that concern problems of education. Obstacles to research efforts in such topics can be generally expected.

So far, political interference in research has not been a concern for most academic researchers who do not work on politically sensitive issues, and, if there has been such an interference, it has not been made official and public. Matters that have been tacitly understood and accepted among researchers to be avoided or handled with extra care include national security, kingship, religion, government and leadership, crime and police, military politics, and policies for ethnic minorities. Although Thai academic or administrative researchers, by virtue of their official status, do not need to seek research permission or clearance from the NRC as do foreign researchers, they still need permission from their superiors to conduct field research, and may have to carry proof of an official assignment before gaining approval from the local authorities to work in their area. The researchers may be advised not to enter districts considered unsafe because of terrorist activities or not to work on problems that could court disfavour from the local people. Such a condition is part of routine administration that is generally accepted.

The establishment of the NRC at the end of 1959 signified an official appreciation for the contribution of research toward the administration and development of Thailand. Research conducted by administrative and university officials has always been facilitated by local authorities in principle, and throughout the period of government without an elected parliament until 1973, martial law imposed no censorship on research. On the contrary, the introduction of government economic development planning, with assistance from foreign advisers, encouraged research, and interest in Southeast Asian studies during the Vietnam War by the U.S. and other authorities released a considerable fund for research by local and foreign scholars up to the end of that war in 1975, but not thereafter. On the other hand, the change in domestic politics in 1973 when parliamentary democracy was restored after a popular uprising spearheaded by the students, produced research interest in such new topics as education for the masses, the role of the trade unions, farmers' movements, etc., which had not appeared during the earlier period. The realignment and new balance of powers in the region after the reconciliation of China and the U.S., and later the domination of the Indochinese states by Vietnam and the activation of the Association of South East Asian Nations (ASEAN), etc., certainly affected the direction of local research and redirected the focus of funding, especially from foreign sources. All these events suggest that the changing political, economic, and social conditions in the country, the region, and the world influence both the topics and the funding of research. Educational research that steps outside the classroom teaching and learning process must also be similarly affected.

But so far, educational research appears to have been little involved with such general factors outside the school setting; so the general climate for research in other disciplines may not seriously apply to research in education. From our investigation of the current situation, most academic researchers are mainly dissatisfied with the inadequacy of funds and inconvenient bureaucratic regulations and hardly ever mention the larger political, economic, and social conditions that may affect research. Ministerial researchers work on projects that have been officially sanctioned and supported, and would have little or no

opportunity to select freely some other topics for private venture. In the field of educational research at present, therefore, the research climate is affected directly not so much by political as by funding and administrative factors.

Research Types, Topics, and Methods

As suggested by Vielle, the classification of research work falls into five categories: research for planning, content research, research about research, evaluative research, and action research. In general, most research examined for this study was for planning (33%) and action (25%), followed by content research (19%), evaluative research (19%), and research about research (4%). Frequently, the kinds of research done are also classified by education levels, i.e., preschool, elementary, and secondary. Data extracted from research abstracts presented at national symposia suggest that about 56% of research is directed toward the elementary and secondary education levels.

In general, individual researchers can choose their own topic to suit their interest and preference; the choice of topics of individual research, hence, is diffuse. Commissioned research topics, however, have been directed by the needs of the country or institution and assigned for such purposes.

Individual Research

Among the 160 submitted research papers in the study, when classified by subject matter, the emphases were on administration (25%), students (20%), and learning and instruction (24%).

The choice of research methods, i.e., tools and methods of analysis, indicates the type of research popularly selected by individual researchers. Most researchers prefer to use questionnaires as tools for collecting data. This implies that more survey research has been attempted. The data also seem to indicate the lack of experimental and quasiexperimental research.

Commission Research

Two influential government units on education — the MOE and the NEC — have produced many research findings used for planning, policy formulating, decision-making, and evaluating the quality and setting the standards of education. Each office, although concerned with educational data, plays a different role. The roles of these offices have been discussed in detail elsewhere, and, therefore, the only concern here is on their research performance.

The NEC is responsible for gathering educational information needed for administration and planning. It dates back to 1957 when the first study on educational statistics was published. Since then much more nationwide research has accumulated. Up to now, NEC has completed 24 research projects. Of these eight involved elementary education and six higher education. There is only one project on vocational education.

Most research attempted by NEC aims to contribute to or to have some impact on education. The NEC is, obviously, responsible for all education levels, and research investigation must be done for all levels. The emphasis is on the priority needs for decision-making. During 1977–79, there was a need to assess the quality of elementary education; therefore, the project on elementary school efficiency attempted to locate the problem areas. During 1980–81, there

was a need to gather data concerning vocational education and the labour market, and a study on this topic was also launched.

The MOE has produced research work since 1954. Most of the research projects came out during 1954–69. Since the research work of MOE began, many offices have been officially established and many dissolved because of the expansion of work and societal change, respectively. Almost every office of MOE is eligible to do research.

Most MOE research work is made up of fact finding for planning and problem solving. Educational settings and the behaviour of teachers and students are also studied. The research, although it is supposed to be applicable nationwide, can usually be applied only within the province in which the samples were taken. Very little research has been accomplished within a region or school. This might indicate a lack of researchers or other personnel attached to the region. The MOE divided Thailand's four geographical areas into 12 educational regions, therefore, the scope of the work might be the cause of the problem.

Patterns of Funding Research

Generally speaking, Thai researchers suffer from a lack of research funds, because the limited resources are allocated to development and operating activities more than to research generation and evaluation. Furthermore, because research needs result from a lack of information necessary for decision-making, they tend to be problem oriented and practitioners sense their raison d'être quite late. Hopefully, their importance will become more evident in the future.

Kinds of Funding

Local Funds

There are two sources of local funds: governmental and nongovernmental. Most, however, are governmental or government related. The government has two different patterns of allocation: as a lump sum of research funds and as administrative funds including research activities. Evidently, a lump-sum payment for research is preferred by research institutions. Among the 17 case studies included in this analysis, ministerial agencies were found to receive the highest amount of funding and education faculties received the second highest amount. It was also discovered that regional universities receive a larger sum than central universities.

Having other sources of funds indicates the institutional struggle that exists for financial support of research activities. Teacher colleges are one example, and the NRC is their biggest donor. Other extrabudgetary sources are institutional private endowments, such as Chulalongkorn University's and MOE's revenues from the copyright of textbooks.

Foreign Funds

Five sources of foreign funds are specified by research institutions: the Ford Foundation, the United Nations Children's Fund (UNICEF), James Thomson Foundation, the International Development Research Centre (IDRC), and the World Bank. Most foreign funds appear in ministerial offices rather than in learning institutions. Researchers in universities do, however, receive financial aid from foreign sources, but this is done at the individual level,

whereas ministerial offices receive grants at the institutional level. Some other foreign sources mentioned are the Volkswagen Foundation, the Association of Southeast Asian Institutes of Higher Learning (ASAIHL), the Regional Language Centre (RELC), and the United Nations Educational, Scientific and Cultural Organization (UNESCO).

Growth Rate of Funding

Most research institutions began receiving research funds about 2 years ago; therefore, the growth rate of research funding in each institution is difficult to determine. Figure 1 illustrates the rate of 1980 research budgets as percentages of those in 1979 by groups of institutions. In a global view, all institutions, with the exception of Sri Nakharinwirot University I, have an increasing rate or at least an equal rate of research budget growth. Sri Nakharinwirot I's decreasing rate can be explained by its limited sum of research grants (U.S.$100 000), which is distributed to eight campuses with four faculties in each campus. The grants fluctuate as a result of the decisions of the Committee for Research Grants Allocation located at the central administrative office.

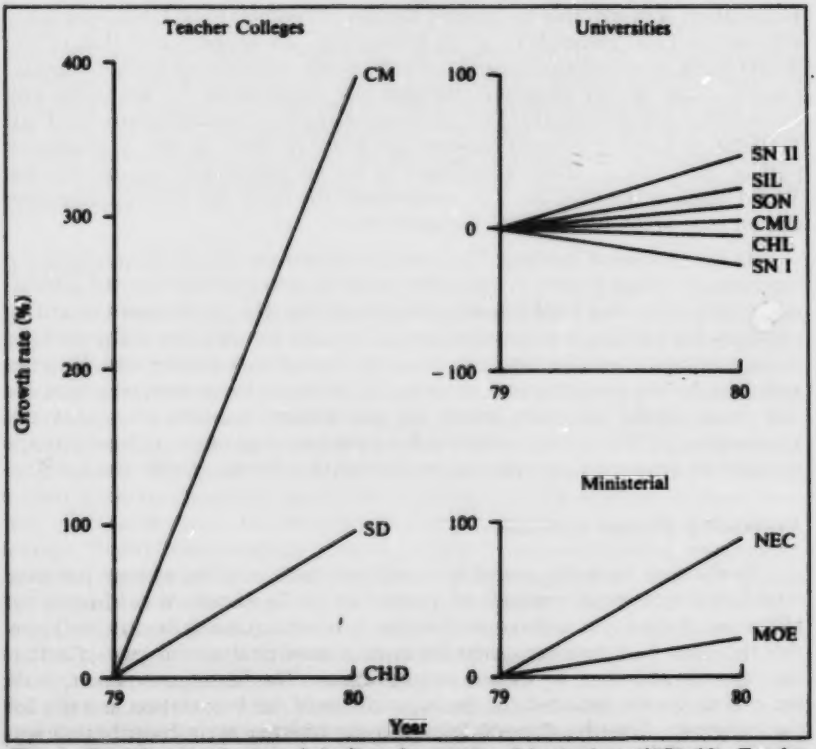


Fig. 1. Growth rate of research budgets by groups of institutions (1979–80). Teacher colleges: Chiang Mai (CM), Suan Dusit (SD), and Chandarakasem (CHD); universities: Sri Nakharinwirot II (SN II), Silpakorn (SIL), Songkla (SON), Chiang Mai (CMU), Chulalongkorn (CHL), and Sri Nakharinwirot I (SN I); ministerial: Office of the National Education Commission (NEC) and the Ministry of Education (MOE).

Criteria for Funding

Five donor agencies who are mentioned by research institutions are analyzed for their philosophies, nature of grants distributed, and the process of funding. Of the five agencies, the NRC, NEC, the Ford Foundation, IDRC, and the World Bank, the first two are local, whereas the other three are foreign. Actually, NEC's research grants derive from the Ford Foundation's financial aid to the NEC under the name of the "Education-Related Social Sciences Development Program."

All these funding agencies aim at encouraging, supporting, and conducting research. The NEC emphasizes the contributive role of social scientists in education, the Ford Foundation puts more accent on the analysis of the effectiveness of educational programs being implemented over time, IDRC's concerns are development and a "team approach" with cooperation from the administrative infrastructure, and the World Bank focuses on the preparation of future projects that lead to planning, monitoring, and assessment of ongoing projects.

There exists some nuance in the nature of research grants among various donors. Of the recipients, most grants are for Thai researchers. The Ford Foundation is rarely able to support foreign researchers. The IDRC implicitly emphasizes local researchers in its philosophy. Its support and that of the World Bank go to institutions and not individuals. Actually, all foreign financial support must go to recipients through the Department of Technical and Economic Cooperations (DTEC). In terms of regional concentration, the Ford Foundation has a particular concern for research work in the Northeastern part of the country. IDRC's emphasis is for all developing regions. But the World Bank is involved both in areas where the Bank has been participating and in new areas for external financial assistance.

In the process of funding, Thai research grants are allocated directly to the recipients. Foreign grants, in principle, must be conveyed through the governmental channels. The Ford Foundation consults the Thai government regarding priorities for funding. The government informs the Foundation of the needs of various organizations for funding. Then, the Foundation decides and delegates authority to the governmental agencies by giving a lump sum of grants for 2–3 years. IDRC provides grants to government agencies after they are approved by DTEC. The government has a steering committee for loan projects to approve research proposals before submission to the World Bank.

Evaluating Research Results

Evaluating research results is a difficult task, and no agency has ever established systematic methods of evaluation in Thailand. Also, there is no follow-up study of the utilization of research results. Among donors, we know that the Ford Foundation requires the evaluation of its financial grants (including research activities) to various organizations. The findings, however, from the evaluation are intended for the internal use of the Foundation and not for the recipients. Usually, donors do not know whether their contribution is a success or a failure. Nonetheless, the crystallization of research results to their final implementation is a long process in which early judgment may be premature and seriously misleading. Perhaps the World Bank's idea of providing a specified amount in the grant for evaluating the results is a good policy to be adopted here.

Role of Donors and Other Foreign Influences

Funding

Foreign research grants have become more and more numerous. They facilitate research activities, because the Thai budgetary regulations are very rigid and do not allow for much flexibility in terms of research expenses. Foreign grants also recognize some costs, such as remunerations and honoraria, that are good incentives to researchers. In some areas like anthropological research or longitudinal studies where researchers are unable to formulate definite research designs or detailed costs of the study at the beginning of the work, financial approval comes easier from foreign donors than from local donors.

Often, foreign funding can also affect the research quality, because researchers who are awarded grants are chosen because they are competent and conscientious. As a result, senior researchers receive grants more frequently than junior researchers. The use of foreign funds helps in the recruitment of high-quality staff, because the investigators are able to choose staff according to their capacities.

Foreign grants partly affect the selection of research topics, especially when donors specify their areas of concentration or require studies for specific purposes, e.g., the World Bank. But, generally, donors do not have much influence on research topics. They may contribute by helping to define research problems or by assisting in the implementation of some methods, but they leave the selection of topics and decisions to the researchers. NEC's Education-Related Social Sciences Development Program supported by the Ford Foundation is an example of foreign funds assigned to research activities without topic interference.

Training

In the past, foreign assistance came in the form of MA or PhD scholarships awarded to local researchers with the view that those graduates would return home and become competent researchers in their own country. International organizations like the Ford Foundation or the Agency for International Development (AID) used such a strategy. Two well-known institutions in the U.S. that collaborated in training previous technicians were the University of Indiana and Michigan State University. However, such an attempt did not appear to be successful because of the relatively infertile research environment, lack of research funds, and the heavy teaching load in the university; therefore, foreign donors have adopted other strategies. Those well-trained researchers, however, have become numerous and have joined together to form a research core and have been recognized for their high quality and competence.

The impact of foreign training falls on the choice of research topics and methodologies. Western influence, especially from the U.S., is evident among Thai researchers. Topic selection in Thailand tends to be in accordance with the trend of research in the West. For instance, higher education drew a lot of attention from educators in the early 60s in the West; Thailand also had analyses and seminars on the same topic in the late 60s. This focus resulted in the establishment of the OUA in 1972. Because the Western idea of the "trickle-down" effect shifted from higher education in the 60s to primary education in the early 70s, Thai researchers focused on primary schooling during that period too. Therefore, both direct and indirect Western influence on topic selection

exists. The direct effect is the training and experience from the Western forum. The indirect effect comes through the suggestions and recommendations made by foreign consultants. An example of the indirect effect is the genesis of the research project entitled "Primary School Efficiency," which was a joint effort involving the NEC, MOE, and the Ministry of the Interior (MOI), which was responsible for rural primary schooling. The project, started in 1973 and completed in 1976, was partly supported by the Ford Foundation. As a national assessment of pupils' scholastic achievement and other related factors, the project had great impact on decision-making and primary-school policies when its findings were disseminated. Methodologically, it was one of the few research projects that used multivariate data analysis at that time.

In late 70s, the trend of educational issues shifted from the internal efficiency to the external aspects of education. Subjects such as economics of education, sociology of education, ecology of education, and comparative education were highlighted. Studies concerning educational planning and finance, education and personnel requirements, equality of educational opportunity, philosophical and historical studies of educational administration and management, etc. have been conducted and are still research topics.

The adoption of Western research methodology has made Thai studies and analyses more systematic and scientific. The positivistic approach, which emphasizes empirical data and quantification, was dominant in the early days of Thai scientific research. This can be explained partly by previous training and experiences of Thai researchers who graduated from the U.S. Our study reveals that the number of researchers who have graduated from U.S. institutions is much greater than the number from other countries. Statistics also show that most research studies are surveys. Nevertheless, a movement to balance the amount of quantitative research has taken place since the end of the 70s. Qualitative researchers have tried to encourage the use of ethnographic methods and to prove their legitimacy among researchers in education and social sciences. Some of those researchers were trained in Europe.

Another significant impact of foreign training can be seen through the decision-making process of Thai high-level administrators. Thirty years ago, decisions were made without the benefit of information from research findings. It wasn't until the regime of Marshal Sarit Thanarat that academic suggestions and technocrats were recognized and welcomed. Thus, studies and analyses conducted by researchers who had direct or indirect training from abroad provided the base on which decisions were made.

Technical Assistance

Consultants during the 60s played a significant role in Thai research, especially in research topics. Some researchers encouraged Thai researchers to launch studies on higher education, which was an issue of the 60s; others later inspired the assessment of primary school efficiency as a result of the Western trickle-down effect assumption (Farner 1973; Fuller 1982) and the undertakings of nonformal education especially in the Functional Literacy Program. However, Thai administrators shared their decision-making in selecting such topics for research projects and in implementing recommendations or development projects. During this period, consultants were also involved in the foreign training of Thai researchers, with the view to preparing research staff for the selected research topics of educational issues.

In the 70s, education as a discipline extended its scope from sheer pedagogy to the social and cultural context of educational phenomena. Consequently, experts in areas related to education, such as economics, were included (Blaug 1968, 1971; Bennett 1972).

In conclusion, financing research projects is a permanent problem where resources are limited. Statistics show that Thailand depends on a large amount of foreign funds for its research activities. However, with the small amount of financial support for research at present in Thailand, it is difficult to identify whether or not this sum has been spent effectively. Although the NRC and the Budget Bureau require that researchers submit their proposals for academic and financial approval, respectively, they never ask for final reports to see how objectives are achieved and what conclusions are reached.

Although politics never has a direct effect on research activities, the political atmosphere does affect the implementation of research findings. Ketudat and Fry (1980) indicate that Thai educational researchers and administrators in a research-policy institution need to "remain both politically detached and sensitive."

Foreign influence in the past, especially funding, came at the right moment, i.e., there was a need for research findings, benevolent leadership, and competent research staff. But that is a retrospective view of donors' roles in the previous environment. In the future, the "father knows best" approach will certainly be rejected and project-basis funding, which gives Thailand less autonomy for her topic selection, will not be desired. Foreign donors are certainly aware of this modification.

Use of Research Results

The worth of research is measured by its contribution. Basic research aims at the advancement of knowledge, whereas applied research seeks solutions to practical problems. Individual academic research benefits learning and instruction, whereas commissioned research provides information for planning, policy formulation, and decision-making for program initiation, continuation, and improvement.

Data concerning the use of individual research results are difficult to collect except by referring to the individual researchers and the users. According to the information extracted from the questionnaires sent to education researchers throughout the country, about 55% replied that their research results have been used to advance knowledge, improve educational situations, assist planning, improve operational units, or improve teaching and learning.

Commissioned research can be classified into research produced by NEC and MOE and research produced by a group of multidisciplinary specialists. As mentioned earlier, research produced by NEC and MOE is purposive research. The results must be used for policy formulation, decision-making, and planning and development. For example, research on the secondary education system has had an impact on the review of the policy on secondary education, reconsideration of the expansion of lower secondary schools, and improving the quality of secondary school education. Consequently, a policy has been formulated not to open new secondary schools in the areas of decreasing student population but instead, to adjust the number of classrooms, educational equipment, and teachers in proportion to the needs.

Educational research is meant to benefit learning and instruction. In Thailand, research done in universities and in the Ministry have different purposes, scopes, and outcomes.

Research produced by multidisciplinary specialists has had an impact on policy and planning. Recently, two influential research projects, one on children (0–14 years old) and the other on adolescents (15–25 years old) have been referred to by decision-makers. Both studies made use of the available data on human resources to account for the present situation and its problems and to suggest policies and plans for children and adolescents.

In general, we feel more confident that applied research results have been made as full use of as possible, because the projects were undertaken with that intention. On individual academic research we feel more diffident and accept the questionnaire responses with caution because it is impossible to know the context of actual application, although any positive statement given by the researchers is reassuring, because, generally, researchers do not know how much of their work has actually been used or by whom.

Strengthening the Educational Research Environment

Research, as an activity in pursuit of truth, can be considered a costly and unnecessary business in a developing country that has limited resources, especially if standard knowledge and methods to solve problems are believed to exist already and to be importable from more-developed nations. To initiate and sustain local research meaningfully and economically requires a realistic awareness of its need and value by both the researchers and their sponsors. The proper attitude toward research must then be complemented by proper logistics in working conditions and facilities. Finally, the results of research must show their contribution to the advancement of knowledge or the solution of practical problems as a suitable return for the cost of operation, and the efforts of researchers must be duly recognized and appropriately rewarded.

Having now considered the present and developing situation of educational research activities in Thailand, we offer the following suggestions for strengthening the research environment:

- Because educational research exists either in the university (academic research) or in the government units in charge of educational administration (administrative or ministerial research), the higher authorities in such institutions would benefit from a clear understanding of the need, cost, operation, and contribution of research to set clear objectives, policies and plans, establish appropriate research administration, and provide proper work conditions and facilities.
- Because education researchers in Thailand are almost exclusively in the service of the government with limited resources, but have been trained in the techniques and methods of more-developed countries that need not be as concerned with resource constraints, there is a need to reconsider the practical meaning and cost effectiveness of imported prescriptions to educational problems in Thailand. This critical rethinking is especially necessary in universities where future researchers are trained.
- Individuals from the demand and supply sides of research should meet to discuss their mutual needs and potential contributions to the development of the country. Although the capability of some researchers to work on theoretical issues and discover some new laws of learning is not denied, much of the research effort so far has been fragmentary in many nontheoretical as well as impractical topics so the reorganization of efforts by close consultation between the supply and demand sides of research is justified.
- Both the NEC and the MOE are responsible for the planning and implementation of national education, representing the demand side of research, but the NEC has the overall policy function that covers education at all levels so it could serve as the pivot for future joint consultation with the supply side of research, namely the universities. Because universities are relatively autonomous, e.g., the OUA does little coordination work for university research, a committee should be formed that includes adequate representation from the academic institutions engaged in educational research to keep each other informed on matters of mutual interest.
- Communication and coordination between the demand and supply sides of research cannot meet all the specialized needs of both sides; these needs must be met by each side independently. Nevertheless, it would be practical and economical for research in a developing country to try to cover the areas of common needs first by close consultation with both sides. The delivery of necessary services, however, requires for both the MOE and the universities, more effective organization and administration of research activities.
- The bureaucratic structure puts many constraints on the performance of research that cannot be easily overcome; therefore, it should not be expected to offer comparable facilities and flexibility of work as in the private sector, which seem to be the conditions demanded by researchers who wish they were in a different system. A research sponsor could help to remove some of the obstacles by supplying the needed facilities that cannot be met within the constraints of the system. Such assistance would not undermine the organization to which the researchers belong if given within the framework of a clear-cut agreement that satisfies the goals of both parties.
- It is possible that some organizations really lack specific objectives and give virtually free rein to individuals' preferences to do research that suits their personal interests. If such a policy fits that of a donor agency, some cooperation can be arranged. Otherwise, it is a better use of resources to support systematic research that contributes to meeting the developmental needs of the country.

• An information system is an infrastructural support needed for all research to help advance knowledge and avoid the useless and unnecessary duplication of effort and the waste of scarce resources. Such a system begins with a research documentation centre that collects all the known research literature within the country so that additional knowledge can be accumulated in an organized manner. Convenience of access inevitably varies with the location of such a centre, but it is inadvisable and uneconomical to have several such centres attempted at once. Such a centre could be established at the NEC, which has a more specialized focus on this matter than any other institution at present that engages in educational research, having already taken into consideration the function of the MOE and the NRC that also have legitimate but less concentrated interest in this type of centre. Because the service of the centre must be open to all researchers, ministerial or academic, local universities could devote their efforts to the production of research and researchers for the relevant kind of research needed by the country and save their budget that would have been used to build up such a collection.

• Other related aspects of the information system are the publication of reports, meetings and seminars, library services, newsletters and announcements, etc., which are individually organized and provided by each institution in varying degrees of adequacy and effectiveness. To assist in the development of all these aspects of the system at all places equally would be beyond the capacity of any one donor agency. Although some cases that merit special attention could be assisted by aid agencies to supplement official resources, it might be better at this stage of development first to help complete the necessary component services of the documentation centre so that it could effectively serve as a coordinating and relaying centre of information.

• Training of the existing personnel in better and more relevant conceptual and methodological approaches to useful research in the context of developmental needs of the country is a worthwhile investment. This could be organized on different scales at different places to suit the various stages of organizational development. As no one institution has mentioned a national-level association of educational researchers that might serve as a coordinating centre for research training, one may begin by identifying an impartial body that appears to be the most commonly acceptable to the majority of researchers. The NEC is again a possible pathfinder in this activity, working in close collaboration with all existing viable associations or groups of educational researchers. Later, the organization and administration of this function could be transferred to any truly national association that emerges.

• Funding of individual research projects for the development of education can become fragmentary and results dissipated in the existing research climate unless the requesting body presents a systematic work program with some definite objectives and implementation plans. To the extent that ministerial research has a tighter organization and control of work and has a more concrete objective to seek solutions to practical problems, supporting such ministerial work responds to real developmental needs that individual academic research can rarely do. But ministerial research is sometimes handicapped by limited personnel that cannot represent all levels and branches of expertise that are needed to handle all aspects of the projects. If a project could be organized to exploit fully the organizational strength of ministerial research and the disciplinary personnel of academic research, especially to work on interdisciplinary problems, the much needed improvement in educational research

would be achieved. But this would depend on mutual appreciation and more systematic collaboration between ministerial and academic research groups. A serious donor agency could encourage this kind of dialogue as a basis for any substantive assistance.

• This kind of venture in research support may be an impetus for organizational reform that is needed in academic research and help to make academic research more relevant to the developmental needs of the country. It will not transform the whole bureaucratic structure of the university, but should partly bring about some more orderly and effective changes needed for the administration of useful research. Exposure of academic researchers to the real and urgent problems of national education, and active collaboration with practitioners seeking some practical solutions, can help put academic theories and methods to the test of reality and should induce further useful changes in the training of future researchers and the thinking of many graduate-school authorities.

These suggestions have been made in the hope that, once attempted, they will generate other related improvements that issue directly from each area under consideration. Thus, for instance, administrators usually complain that the technical writing contained in many research reports is incomprehensible to them, but without a serious dialogue between the practitioner and the researcher, no attempt to improve technical writing will succeed. With a better information system, some generally useful digest of research reports could also overcome this difficulty. Improvement in graduate-research training could also result from more direct involvement of professors in actual problem-oriented research. Better evaluation of research work in respect to its methodology and its eventual application could be made on a sounder basis if measured against the concrete problems of developmental needs, etc. Without a systemic view of the larger problem, the piecemeal examination of diffuse issues that concern individual observers will effect little result.

Because some data were not available in written form some key informants who have been involved in Thai educational research were interviewed for specific information. Data concerning the institutionalization of research and those concerning the role of donors were kindly furnished by Professor Dr Sippanondha Ketudat, former Secretary-General of the Office of the National Education Commission, during an interview. In another interview, Dr Gerald Fry, former Ford Foundation Consultant to the NEC, provided information included in the section on patterns of funding research.

Jordan

Analysis of Educational Research Capacity in Jordan

Jordan as a legal and political entity has existed since 1921 when the Emirate of Trans-Jordan was carved out of Palestine by the British. The emirate was later transformed to the present-day Kingdom of Jordan, ruled by the British until 1946. Unlike other Middle Eastern Arab countries, Jordan is a poor country. It lacks oil and has few other valuable natural resources. The country, however, earns foreign exchange from remittances of Jordanians working in wealthier neighbouring countries. In recent years, there has also been an accelerated economic growth as a result of heavy investments in the public and private sectors. This pace of development, however, has been tempered by recurrent wars and instability in the Middle East and by Jordan having to shoulder part of the major burden of harbouring and supporting displaced Palestinians.

In this case study, the authors examine the social and cultural contexts within which educational research is conducted in Jordan. They argue that historically, Jordanians have been characterized by a reluctance to give information. The intentions of those seeking information are suspect; consequently, the information given is unreliable. This attitude persisted up to the late 50s. The authors contend that these fears result from a mistrust of government — an inheritance from the oppressive Ottoman Empire and British rule.

However, the authors argue that the rapid social and economic changes of the 60s have wrought some changes in people's attitudes toward inquiry. This is reflected in a greater willingness to cooperate with those seeking information. Nevertheless, the situation is not to be exaggerated. The authors contend that Jordanians are still very conservative and, in general, tend to support the existing social and political arrangements (an increasingly unequal social system typified by a hierarchical division of society, corruption, and repression). They point out that if research is to question what exists or to change what people are used to, then it finds little or no support.

Religious beliefs and values dominate all aspects of Jordanian society, and the family has great influence on the individual. Decisions are taken for individuals by "elders" who are considered experienced and knowledgable in all areas. The dictum, therefore, becomes: to criticize is to err; to obey, a virtue. Hence, a lot more importance is attached to what "elders" say (or the Koran explains) and not to what research findings demonstrate.

The authors conclude that as far as a demand for research exists in Jordan, it is from outside organizations funding various development programs. Most of the research conducted locally is for job promotion purposes rather than for the creation or expansion of available knowledge. Although many practicing researchers have had some form of postgraduate training, there is a dearth of conceptual and analytical skills. There is little or no coordination in research efforts, and professional ties among social scientists are very weak.

***Farid Abu Zeineh and Derar Jaradat** Education Department, Yarmouk University, Irbid, Jordan, in collaboration with M.I. Hassan, Yarmouk University, and L. Taminian, Ministry of Education, Amman, Jordan*

Jordan is a Middle Eastern country, but, unlike most of its neighbours, it has very limited natural resources. The population of Jordan is 2 737 000 with a growth rate of 3.3% per year. A total of 56.1% of the whole population lives in urban areas, and only 23% of the population is economically active (United Nations Environment Programme 1980).

The contemporary history of Jordan began in 1921 with the establishment of the Emirate of Trans-Jordan, which was administered directly by British authorities. The country remained under British rule until the declaration of independence in 1946.

The 1948 war and the unification of the East and West Banks marked the beginning of a new era in the history of the country. As a result of the war and the establishment of a Jewish state in occupied Palestine, thousands of Palestinians found refuge in the country. Moreover, the unification brought profound changes in the political, economic, and social life (Hourani 1978). Jordan witnessed a rapid urbanization movement that was accompanied by a rapid growth of cities such as Amman, Irbid, and Zerka. This, of course, gave rise to new problems of housing, health, and education.

The social and economic problems created by the war and the influx of Palestinian refugees were such that the government made a move toward planning and directing economic activities. Thus, in 1962 the government launched the Five Year Plan for Economic Development (1962–67), which was later revised to become the Seven Year Plan (1964–70). The plans aimed at a reduction in the trade deficit and in the reliance on foreign aid. Furthermore, the plans recommended an increase in the gross national product (GNP) at an average rate of 7.3%.

During the years 1950–67, the country witnessed economic growth that came about as a direct result of expansion in public services, utilization of natural resources, and employment.

The 1967 war and the occupation of the West Bank by Israel had damaging effects on the momentum for development. The country was deprived of 40% of its GNP contributed by the West Bank. The average annual growth rate dropped to 3.8%, and the major projects of the Seven Year Plan were suspended. Defence expenditures grew rapidly and the government's reliance on foreign aid increased significantly. Moreover, a new influx of 400 000 Palestinians from the West Bank and the Gaza Strip intensified the already existing problems in housing, health, education, and employment.

The situation was aggravated by frequent Israeli raids on villages, towns, and agricultural areas in the Jordan Valley. Jordan was in a state of complete economic paralysis until 1973 when the government, in an effort to breathe life into the shattered economy, launched the Three Year Plan (1973–75), which was followed by two Five Year Plans (1976–80 and 1981–85).

The years 1973–81 witnessed a rapid economic growth manifested in an annual growth of almost 10% (Jordan Information Bureau 1980). This came as a direct result of a better use of natural resources, expansion in industry, and a sharp increase in the inflow of money from Jordanians working abroad. However, Jordan still faces several socioeconomic problems, the most serious of which are the brain-drain, the migration of skilled workers and technicians to neighbouring oil countries, the high rate of population growth, and the low percentage of an economically active population.

The Educational System

Aims and Objectives

The Education Law No. 16 of 1964 delineates the general outline of educational philosophy, specifies educational aims and objectives, determines years of schooling, and shapes the organizational structure of the educational system in Jordan. According to this law, education aims at helping the learner understand various aspects of his or her environment, develop basic skills of communication, and grow physically, intellectually, and emotionally to contribute fruitfully to the development of society. Chief among the objectives of emotional and intellectual development are faith in God, loyalty to the Arab nation and pride in the Arab–Islamic heritage. The time alloted to religious education, Arabic language, and Arab–Islamic civilization constitutes a considerable part of the total school curriculum.

Educational objectives have been recently revised to ensure the importance of education to comprehensive national development. Therefore, education is to be integrated into the total social economic needs of the country, and education is to be considered as an instrument of social and economic advancement of individuals (Ministry of Education 1981).

Increasingly, greater attention is being given to vocational education. The Ministry of Education is experimenting now with comprehensive schools, where the curricula include a mixture of academic and vocational education. In addition to comprehensive schools, there are vocational schools at the

Educational objectives in Jordan have been revised to ensure the importance of education in comprehensive national development — would these forestry workers be any more productive with higher education?

secondary level. Students in vocational education, however, still constitute a small proportion of the total student population.

Organizational Structure

Jordan is, perhaps, one of few countries in the Third World that has 9 years of compulsory education. Children 6 to 15 years old are required by law to attend public or private schools. Education in public schools is free, not only throughout the compulsory 9 years but also in both types of secondary education, academic and vocational.

Children start their elementary education at the age of 6 years. The 6-year primary cycle is followed by 3 years of preparatory education and by secondary education for 3 more years (grades 10–12). Education at this level is provided by general secondary schools, comprehensive secondary schools, and vocational secondary schools. At the end of their secondary education, students sit for a general examination. Those who pass are entitled to pursue their higher education in Jordan and abroad.

Higher education in Jordan is provided by 35 community colleges (2-year postsecondary education) and three universities: the University of Jordan established in 1963, Yarmouk University in 1976, and Múta University in 1981. Both community colleges and universities furnish teacher education programs. Community colleges provide prospective teachers with 2 years of preservice training to qualify the graduates to teach at the elementary and preparatory levels. Universities, through diploma and MA programs in education, qualify teachers to teach at the secondary level.

System of Administration

The Ministry of Education is the governmental agency holding full responsibility for education in Jordan. To achieve the aims and objectives of education, the Ministry maintains responsibility for formulating general policy, overall planning, and curriculum development. It supervises public schools and institutions, and controls private and foreign educational establishments in Jordan. The central office of the Ministry consists of 12 directorates: Planning and Educational Research, Curricula, Textbooks, School Building, Community Colleges, In-Service Training and Certification, etc. Jordan is divided into 17 districts of education distributed over five governorates. Each district has an office of education, whereas each of the five governorates has a general field director of education.

Educational policy and planning are the responsibility of a committee headed by the Minister of Education and consisting of the directors of education in the central office as well as the five general field directors. With respect to general policy (changing curricula, introducing educational innovations, etc.), committee decisions have to be approved by the Board of Education, which is again headed by the Minister of Education and consists of members both within and outside the Ministry. This Board represents the highest educational authority at the secondary and junior college levels.

Strictly speaking, the Jordanian system of education is centralized. Attempts have been made, however, to delegate progressively more authority to the field directors of education.

Educational Research in Jordan

Research Climate

The purpose of this section is to gain an understanding of the social and cultural contexts in which educational development and educational research are currently conducted. Describing and analyzing the climate for research in Jordan is not an easy task. The climate for research is the product of numerous interrelated factors that range from easy-to-learn and more complex research skills to as yet undefined cultural variables that impose restrictions on the types of research that can be conducted. The description and analysis of such a climate is not limited to educational research in particular, because research is an activity that taps a variety of disciplines and interests.

To begin with, an examination will be made of what Jordanian sociologists and anthropologists say about the value of inquiry in the Jordanian culture. Historically, Jordanians were reluctant to give information. The intentions of those collecting data were met with suspicion. Consequently, information given was not reliable. This attitude was still dominant until the late 50s. It may reflect the people's mistrust of the government, which was inherited from the Ottoman regime and the British Mandate that followed.

Since the early 60s, Jordan has undergone a number of drastic social and economic changes. Those changes have created a need for a better flow of information between different sectors of society. Techniques of getting information and gathering data have been improved. This has been accompanied by an increase in the level of education for the average Jordanian. As a result, there has been a shift in the people's attitudes toward inquiry, which is reflected in their willingness to cooperate with those who seek information.

How do Jordanian people view research? One sociologist, Dr Ali Zaghal of Yarmouk University, made the following comment in answer to this question: ". . . this depends on one's age, class and more important on his educational level . . . . Traditionally, Jordanians had negative attitudes towards individuals seeking information. However, things are changing now as a result of more education and an increase in research activities." Enthusiasm to respond to questionnaires correlates highly with the prestige of the researchers and the institute to which the researcher belongs.

Generally speaking Jordanians are conservative and tend to maintain the status quo. If research is to question what exists or to change what people do, then it finds little support. The Jordanian culture is not open to criticism and does not help the analyst a great deal. People in Jordan are not familiar with conventional tools of information gathering. Data are gathered more often to support one's convictions. A great value is attached to what the elders say rather than to what research findings demonstrate. In this sense, experience is more important than knowledge or schooling; research will not change life because things are predestined.

Religious beliefs and values dominate almost all aspects of life in Jordan. The majority of social conflicts and problems can be easily solved via religious rules and principles. Islam is the route to truth and reality. It is looked upon as a spiritual and wordly religion as well; it embodies both faith and the law for life.

The family has great impact on the individual. Decisions for individuals are taken by elders who are more experienced and more knowledgable. To

criticize is to err, to obey is a virtue. The younger generation, however, is achieving more independence.

Education in Jordan is viewed as one of the major investments in the country's economy. Expenditures on education made by both the public and the private sectors are viewed as an investment in human capital. About 40% of the work force in Jordan is working in the neighbouring oil-producing countries. Almost all of them are either skilled or highly educated workers. They contribute significantly to the welfare of Jordan.

People in Jordan find in education a force for social mobility. In addition to the fact that Islam urges Moslems to educate themselves, Jordanians place education on the top of their list of priorities. It is very common for a typical family to live at the subsistence level to afford sending a son to a university in Jordan or abroad.

The academics and policymakers interviewed for this study all stressed the importance of research for decision-making and policy formulation. It was confirmed, however, that decisions are not made in the light of research findings. Three ministers of education who assumed office since 1970 said that educational decisions have not been based on systematic research findings, although they admitted that it might have been better had such decisions been based on research. This explains the scarcity of research funded by the Ministry of Education, and the absence of forms of cooperation in this respect between the Ministry and the universities. The majority of those who responded to the questionnaire or were interviewed stressed the fact that the Ministry has not benefited so far from the research done by others. All the respondents to the questionnaire indicated that research findings have nothing to do with decision-making or policy formulating.

Thus, demand for educational research in Jordan comes mainly from outside. Responses to this study's questionnaire showed that out of the 11 research projects conducted by Jordanian researchers, only two were requested by the local bureaucracy. The other nine were carried out at the request of foreign agencies. This of course shouldn't mean that research is carried out at the request of a bureaucracy or foreign agency only. Research in Jordan is done for other reasons including promotion, the production of new knowledge, and remuneration. Needless to say, research is also carried out by graduate students as part of the requirements for their MA degrees.

Ties between educational researchers and other social scientists are very weak. Upon reviewing educational research done in the country, very few projects were carried out in collaboration with other social scientists. The same applies to relations and interactions between educational researchers and researchers in other disciplines as well as between educational researchers and researchers abroad. Rarely, if ever, is such interaction noticed.

The absence of a national research strategy to bring researchers together has resulted in a weak state of communication and cooperation. However, a group of researchers and educators is now in the process of forming an association, the purpose of which is to coordinate and facilitate research activities in Jordan.

Institutionalization of Research

Institutions Housing Research

Educational research in Jordan is conducted at various institutions, but

mainly at the universities. Such research is done by faculty members and graduate students enrolled in the MA program in education. None of the institutions housing research was founded to do research as its major function except for the Royal Scientific Society (RSS). Established in 1970, the RSS has a department for education as one of its units. Unfortunately, the department has not done any significant research. The director of this department, who happened to be an engineer, indicated that its major function now is the development of textbooks for vocational education.

A Research and Development Center for Education is being established at Yarmouk University. The Center will cooperate with the Ministry of Education in tackling educational problems such as curriculum evaluation and development. The Center will also participate in the development of original knowledge and will cooperate with all segments of the University in the quest for better education for people at all educational levels in Jordan.

The organizational structure of the Ministry of Education accommodates a research section within the Ministry's Directorate of Planning. In addition to this research unit, another unit exists to compile figures and statistics on school enrollment, attendance, and needs. Research activities related to the needs of the Ministry of Education are supervised and administered by a research committee formed by the Ministry. Aside from the regular gathering and compiling of figures on schools and teachers, very few studies about educational problems have been done by the research unit.

Facilities

The condition of research facilities, equipment, and support staff has been described by educational researchers in Jordan as adequate in some aspects, but needing more support and improvement in others. The analysis of questionnaire responses showed that relevant literature, equipment, and computer services were considered to be satisfactory, whereas the support staff available for research was not satisfactory.

Two of the major sources for structuring research are the availability of a good data base and the institutional ability to collect and process these data. Such a data base is not available in most cases, and, if any exists, it is inadequate or insufficient. The secretary of the National Planning Council in Jordan stressed the need for such comprehensive data as a basic requirement for development and research. All that is available now are statistics and figures about schools, students, and teachers. The carrying out of good-quality research is further hampered by an inadequate system of communication that makes it very difficult to bring qualified researchers into contact with one another and with relevant sources of information and data.

Structural Arrangements

A policy for grouping researchers and coordinating research efforts is still lacking at the national level as well as at institutional levels. Because of the lack of an organizational structure, it is difficult for researchers with the same interests to know of each other's work. Therefore, the Jordanian researcher works individually. This does not mean that cooperation does not exist or that help from others is not offered, but such cooperation is the exception rather than the rule.

The only form of leadership that exists for educational research is the Committee of Educational Research formed in the Ministry of Education. But this committee is functioning on a very limited basis and under strict regulations that do not encourage researchers to approach the Ministry for assistance in conducting their research.

Research Skills

Kinds of Researchers

Because educational research institutions do not exist in Jordan, research activities are restricted to those who join any of the faculties of education in the country as faculty members or as graduate students in the MA program in education. When the designation of "researcher" is limited to faculty members with PhDs in education, 53 such researchers are found at Jordan's two major universities. The majority of those faculty members (about 80%) are graduates of American universities, whereas the remainder are graduates of Arab universities outside of Jordan. Table 1 classifies these researchers according to the specializations of their PhD degrees, summarizes the specializations in preceding degrees, and further classifies the researchers according to their educational (subject-matter) backgrounds.

It is clear from Table 1 that many faculty members at Yarmouk University have backgrounds in math and science (nine out of 25) with the majority of them continuing their higher education in curriculum and instruction. In contrast, many faculty members at the University of Jordan have backgrounds in sociology and education and psychology, and have completed their PhDs in foundations of education and educational psychology.

If those individuals with MAs in education are considered "potential researchers," more than 200 can be counted; about 15 of them work as research assistants in universities, whereas the rest are employed by the Ministry of Education. More than 80% of these potential researchers are graduates from universities in Jordan. They are evenly distributed among the different fields of specialization offered in MA programs as well as across subject-matter backgrounds.

Available Skills

With their wide variety of backgrounds, these researchers possess educational research skills in the areas of curriculum development, instruction, teacher education, administration and supervision, and test construction. They also demonstrate competence in social science disciplines such as anthropology, economics, and sociology. Regarding their training in research skills, all researchers possess and practice those skills that are best described as descriptive and information-gathering skills. In addition, inferential and experimental skills are learned by almost all researchers, although seldom practiced. However, the faculty members who responded to the questionnaire remarked that the Jordanian researcher lacks conceptual as well as analytical skills. They also specified deficiencies in the following areas: design and methodology, writing proposals, data analysis, interpreting results, and writing the final report. The writers of this report are unaware of any educational research conferences or

symposia held in Jordan in which researchers have presented and discussed their findings.

Educational research is generally considered a group or team activity. Unfortunately this is not always true in Jordanian universities. The cooperative relationships among researchers at Yarmouk University are, however, stronger than those relationships among researchers at the University of Jordan. This conclusion is based on the fact that research at Yarmouk University is conducted in teams, whereas research at the University of Jordan is practiced individually. This may partly be attributed to the condition imposed by promotion regulations at the University of Jordan — to be promoted, the faculty member must submit a certain number of publications, one of which must be an individual effort.

Training

Both universities in Jordan offer an MA degree in education necessitating a minimum of 2 years to complete the requirements of the degree including the writing of a thesis. The MA program at Yarmouk University is offered in nine areas: math education, science education, English teaching, social studies, educational psychology, testing and measurement, guidance and counseling, educational administration and supervision, and educational technology. The University of Jordan offers MA degrees in five areas: foundations of education, educational administration, psychology, tests and measurement, and guidance and counseling.

The MA program at Yarmouk University stresses conceptual and analytical skills more than its counterpart at the University of Jordan. On the other hand, the University of Jordan emphasizes traditional courses in the foundations of education that are not offered in Yarmouk University's MA curriculum. However, a number of good MA theses in the University of Jordan have been completed in the area of testing and measurement.

Performance of Research

Kinds of Research

The purpose of this section is to analyze the research act itself, that is, the kinds of research being done and the quality of such research. Data on the kinds of research being performed were gathered and classified according to (a) purpose, i.e., Shaeffer's (1980) classification as adapted from Vielle; (b) type, i.e., basic vs. applied; and (c) topic chosen for research. Data were gathered about 126 MA theses and 30 research studies carried out by faculty members at the two Jordanian universities. Classification of research according to purpose was based on Shaeffer's five kinds of research: (a) research about research, (b) content research, (c) research for planning, (d) evaluative research, and (e) action research. However, no research was found that could be classified as "research for planning" or "research about research." One more category was added as "others."

Topics chosen for research were categorized as follows: (a) history of education, (b) educational psychology and testing, (c) curriculum development, (d) economics and foundations of education, and (e) educational administration, supervision, and teacher education. As mentioned earlier, educational research in Jordan is conducted mainly at the Jordanian universities. Such research is carried out by faculty members and graduate students enrolled in the MA programs in education. Table 2 classifies MA theses and research done by faculty members according to purpose, type, and topics chosen for research.

It is surprising to find out that no research was done on research about research and research for planning. Few studies were carried out as action research in the area of curriculum development. Many MA theses were in the area of educational psychology and, specifically, in test development. It is worth mentioning that the majority of research at Yarmouk University was carried out in curriculum evaluation.

Table 2 also shows similar trends in the type of research done by faculty members and graduate students. This reveals that research done by graduate students reflects areas of interest of their supervisors (i.e., faculty members).

Quality of Research

To evaluate the quality of educational research in Jordan, a sample of 29 published research articles was selected and reviewed. Review of each article was done using a checklist consisting of 12 criteria suggested by Lehmann and Mehrens (1978). These criteria are: (a) Is the problem clearly stated? (b) Does the problem have a theoretical rational? (c) How significant is the problem? (d) Is there a review of the literature? If so, is it relevant? (e) How clearly are the hypotheses stated? (f) Are operational definitions provided? (g) Is the procedure (or method) used to attack and answer the problem fully and completely described? Was a sample used? If so, how was it selected? (h) Are there any probable sources of error that might influence the results of the study? If so, have they been controlled? (i) Were statistical techniques used to analyze the data? If so, were they appropriate? (j) How clearly are the results presented? (k) Are the conclusions presented clearly? Do the data support the conclusions? Does the researcher overgeneralize the results? (l) What are the limitations of the study? Are they stated?

A few of the articles were of a high quality. In general, however, the review of the articles led to the following conclusions:

- Most of the problems pursued were of little significance to the practitioners and did not emerge from a well defined theoretical framework. Moreover, problems were general in nature rather than specific and well defined;
- Hypotheses in many studies were implicit. When explicitly stated, they did not have a sound theoretical background;
- Review of related literature was either lacking or not adequately done. In a number of cases the literature reviewed was irrelevant to the particular problem;
- Proper sampling strategies were seldom used;
- Procedures, design, and methodology employed were not described with sufficient clarity in most of the studies. Methods for establishing validity and reliability for instruments used were not described. Control of factors threatening internal and external validity of research findings was lacking in most studies;
- Statistical techniques employed were elementary and inappropriate. Rarely were sophisticated techniques used;
- Researchers tended to overgeneralize their findings. Awareness of the limitations of the study on the part of the researcher was not evident; and
- Discussion of results was very limited in many cases. Conclusions and recommendations did not logically stem from the results.

Who is Doing Research?

Educational research in Jordan is carried out by faculty members of education, by graduate students pursuing a PhD outside or an MA degree inside Jordan, and by officials at the Ministry of Education. Faculty members at the university conduct research for one or more of the following reasons: (a) promotion, (b) production of knowledge, (c) at the request of an agency or

institution, and (d) for remuneration. In carrying out research, Jordanian researchers face a number of difficulties such as the lack of cooperation of others, inadequate instrumentation, inaccurate data collection, and a lack of technical assistance. Once research is completed and a manuscript is prepared, researchers complain that the means of dissemination are scarce. A periodical for educational research does not exist in Jordan, there is only one social science periodical that publishes educational research, and there are few scholarly education research periodicals in the Arab world where articles from Jordan might be published.

Research done in the Ministry of Education is carried out mainly by officials in the Ministry at the request of the Planning and Research Committee. This research is best described as systematic data collection. It is limited to certain problems that face the Ministry such as drop outs, tutoring, summer courses, and grouped classes.

Recently, the Ministry of Education has been trying to rely more on universities in its efforts to improve the quality of education. Educational researchers at the universities are getting more involved in the challenge facing the Ministry. This involvement may open the door for new lines of research and, thus, to a new matrix of the kinds of areas of research carried out in Jordan.

Research Funding

Four sources for funding research at the university level were identified. These are the researchers themselves, the university, foreign agencies, and Jordanian agencies. No statistics are available on the amount of funds provided by each of these sources. The questionnaire, however, showed that the first two sources were the major ones. Some of the foreign agencies that provided funds were the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Children's Fund (UNICEF), and the International Development Research Centre (IDRC). Three national agencies also funded educational research projects.

Although the majority of those who responded to the questionnaire pointed to financial support as the main problem, the Dean of Education at the University of Jordan and the Dean of Research at Yarmouk University confirmed that money alotted to research in general and to educational research in particular was not spent. The Secretary of the National Planning Council (NPC) made it clear that educational researchers are not persistent enough in soliciting research grants. Only one educational research project was funded by NPC.

This is not to suggest that there is sufficient funding available for educational research. The budget figures in both universities for research in general do not exceed U.S.$0.75 million. The national budget allocates about U.S.$1 million for research to be distributed among the University of Jordan, Yarmouk University, and the Royal Scientific Society. The Ministry of Education's research budget is not more than U.S.$20 000.

Research done by graduate students is usually funded by the students themselves. The impact of foreign researchers and foreign funding on educational research practices in Jordan is very limited. Demand for foreign experts and

funding comes from the Ministry of Education for the initiation of new education projects. Services offered in such cases are not classified as research activities.

Major Issues and Problems of the Research Environment

The standard of researchers' competence, the quality of research, and the lack of interest on the part of consumers has created a gap between research findings and practical application. Thus, research has not substantially influenced educational policy and practices.

Scope of Educational Research

As noted earlier, the bulk of educational research in Jordan is content research. A high percentage of research studies done by faculty members and graduate students is best described as content oriented, basic research. Action research, which is undertaken to improve practices, is carried out infrequently. Although evaluative research is conducted more often than action research, the demand for it does not stem from the bureaucracy's need to evaluate educational programs and innovations. Furthermore, imbalances in topics chosen for research have resulted in little attention being given to important areas such as curriculum development and instruction.

The absence of research about research for planning in Jordan is surprising. It may be explained by the absence of research institutes and the indifferent attitude of the bureaucracy toward research. Although research should guide planning, educational decision-makers are either unaware of this fact or they tend to ignore it. The quantity of applied research has been equivalent to that of basic research. However, more applied research is needed to find solutions for current educational problems.

Quality of Research

Educational research in Jordan has been criticized from different perspectives. Besides being insignificant, problems that have been the subject of research have not had an adequate theoretical rationale. Poor design and inadequate data analysis procedures have been the rule, and unsubstantiated conclusions and overgeneralizations are common. However, the evaluation of research quality in Jordan should not be made without considering the problems facing the Jordanian educational researcher. A few of the most important problems are the lack of support staff, limited research funds, the paucity of accurate measuring instruments, and the difficulty in obtaining reliable, valid data.

Also relevant to the quality of research are the researchers' interests. There is no one specific area of interest that typifies the Jordanian researcher. It is common to find a researcher doing research on a multitude of areas such as test development, teaching methodology, curriculum evaluation, and mental health.

Organizational Bonds

The shortcomings characterizing educational research in Jordan make the need for coordinating educational researchers' efforts indisputable. It is

important to establish research networks and bonds to facilitate coordination and cooperation among researchers themselves as well as with consumers. The establishment of such networks will help in using research findings in decision- and policymaking.

Because interaction between educational researchers and researchers in other disciplines is weak, interdisciplinary research in Jordan has not received the attention it deserves. Overemphasis has been placed on disciplinary research. A network that incorporates researchers in different disciplines will provide opportunities and encourage more interdisciplinary research.

The establishment of effective research networks and bonds necessitates the existence of a dynamic research leadership in the country. The role of such a leadership is to assume responsibility for planning, policymaking, defining priorities, and enriching and balancing the mix of research skills.

Data Base

A good data base is essential to educational research. There is no good data base, unfortunately, in Jordan. Other than statistics about the number of schools, teachers, and students prepared by the Ministry of Education, no systematic efforts have been made to develop data banks for research purposes. Technolgy has not been of much use in storing and retrieving data. If research is to serve education in Jordan, there must be access to good data sources. To improve the status of educational data, the introduction of modern technology for data collection and utilization is needed.

Dissemination of Research

A vital component of a supportive research climate is the existence of channels for disseminating research findings. As Fox (1969, p. 71) noted, dissemination of research findings and encouraging action culminate the research process. "The researcher's responsibility does not cease when the report has been completed. Instead he should move on to actively disseminate the findings of his research and agitate for whatever changes in program policy or organization are suggested by the findings." This is not the case in Jordan. Although many MA theses in education (about 50 per year) are done, the findings do not reach users in or outside the Ministry of Education because of inefficient channels of dissemination.

Jordan's educational researchers also suffer from the absence of any scholarly educational periodical in which to publish their research. Therefore, they are forced into having their research published in journals and other publications established for disseminating research in other disciplines. Consequently, the researcher's enthusiasm to carry out research is diminished. On the average, a researcher publishes no more than one study in 2 years.

Research Funding

Unlike other components of the educational research environment in Jordan, funding does not constitute a serious problem. However, researchers need more flexible regulations in spending funds. Direct financial support to the individual researcher is preferred.

National and international agencies have not played a significant role in funding educational research in Jordan. As stated earlier, one reason for this may be that the Jordanian educational researcher has not solicited funds for research from local and foreign donors because, in terms of honoraria, they receive little if any money for their work.

Recommendations for Capacity Building

Because of the intricate nature of factors influencing the general environment for research in any country and the diversity of suggestions that can be offered in this regard, the following suggestions and recommendations to promote capacity-building strategies are confined to educational research:

- A national strategy for education that encompasses research as a basic component is essential. The research objectives for such a strategy should include defining priorities for research, ascertaining collaboration between institutes housing research, allocating funds, promoting and encouraging researchers to do research, and, more important, providing research leadership. This strategy can be planned and executed through the formation of a higher national council for research. The proposed council should have members from universities in Jordan, RSS, NPC, and the Ministry of Education.
- The problem of disseminating educational research findings should be solved as soon as possible. Educational researchers in Jordan should seek better means of communicating their ideas to others. The establishment of scholarly educational periodicals, circulation of information about research activities via newsletters, and arrangements for periodic conferences and symposia on educational issues will all contribute to solving the dissemination problem. A system to produce and distribute research abstracts within Jordan is also important.
- Research training should receive more attention in Jordan. There is no research training done outside the conventional path, i.e., a university setting where a student is enrolled in an MA program. Jordanian educational researchers acknowledge their lack of competence in certain research skills, and they emphasize the need for training in design, methodology, and presentation of findings.

A program for training researchers outside traditional settings is proposed. This program should be initiated by the Ministry of Education to help schools as well as community college teachers carry out action research and to some extent evaluative research. The proposed program may include short-term training as well as long-term training done locally and abroad. At the university level, recognition and preference should be given to team research to help balance and integrate research skills possessed by the different members of the team.

- The establishment of more educational research and development centres within the framework of Jordanian universities is highly recommended. In this respect, Jordan may draw upon the experience of other developed countries. These centres can start as general purpose centres and proceed gradually to more specialized functions.
- The availability of more funds for educational research may stimulate educational researchers' motivation to do more research. It is equally important to reduce faculty members' teaching loads, provide better infrastructure for

educational research, and relax the rigid regulations for spending research grants.

Jordanian educational researchers are urged to be more active and aggressive in soliciting funds for research. One of the functions for the proposed council for research should be to allocate and pool research grants from outside as well as inside the country.

Educational Research Environment in Kenya

In the first of the two Kenyan case studies, David Court discusses the research environment in Kenya in terms of its recent changes and likely future directions. In the years soon after independence, research was generally perceived to be something of a luxury. In a sense it was. As Court points out, at the time of the break with colonialism, an educational system based on a racial structure, with limited opportunities for Africans and a highly Eurocentric content, did not need to wait for research to point out the required directions of change. But in the last 15 years or so, research has begun to establish itself as a valued activity.

This increased interest in research coincided with a number of factors, among them the international expansion of the American brand of social science and the flowering during the 60s of the human capital theories and the application of these and quantitative empiricist methods to the study of education in the region. Kenya, in particular, with its renowned political stability and favourable climate was a popular research site for many Western scholars. Related to the above was the growing importance of international aid from the World Bank, UNESCO, ILO, USAID, and others to education and the interest of these organizations to have more information than was generally available about the educational system into which they were putting their money. On its side, the Kenya government was anxious to have the necessary knowledge to manage an increasingly complex system that now absorbs about 25% of the national budget.

The change of attitudes about the need for research led to the development of facilities and infrastructure within the University as well as in governmental and nongovernmental organizations. However, Court argues that although the total number of professionals in these research institutions is now around 100, the number actively engaged in research is less than a quarter of this; the number whose work is recognized and utilized within the country is probably half as much, and those who have established reputations on an international level can be numbered on one hand. In other words, the active research community is relatively small in comparison to the size of the larger academic community in which it exists and despite a very well established basic research infrastructure and other ancillary services. As a result, Court argues, the research community does not adequately meet the information and analysis needs of its large and complex educational system.

Some of the problems that beset research activities and research institutions are part of the historical legacy whereas others are structural. Among these, Court cites education's failure to attract the best talent available into graduate study, teaching, or research. There is then a severe shortage of local funds for research leading researchers to scramble for international agency support through short-term research projects or consultancies. Those who obtain these, however, are a relatively small group, thus leading to intrainstitutional strife and resentment. Moreover, although the value of many of such research projects or consultancies is highly doubtful in terms of contributing to the pool of existing knowledge, Court points out that their overall effect is to expand the scope of commercial norms to the

David Court *Representative of the Rockefeller Foundation, P.O. Box 47543, Nairobi, Kenya*

point where anticipated fees, rather than peer recognition or a desire to contribute to knowledge, are rapidly becoming the mainstay of the research enterprise.

Compounding the above scenario is the government's ambiguous attitude toward research activity. On the one hand, Court observes, research and ideas are sought for their planning utility. On the other hand, tolerance of government to opinions that imply criticism is limited. The point that is reached then is that most people in government do not want to see the advocacy of new ideas and strategies as the essential responsibility of scholars and researchers.

Societies differ in their ability to generate, conduct, and apply educational research and in their inclination to do so. These differences in research capacity stem from characteristics of the research environment, including such things as the quality and range of available research skills, the strength and cohesiveness of research institutions, the level of public demand for research, and the general supportiveness of the research "climate."[1] The various components are interrelated in a complex manner and are the product of a particular pattern of historical evolution and of the kind of society that has emerged from it. The purpose of this study is to describe the research environment in Kenya as a basis first for identifying those factors that account for observed patterns, and second for specifying those areas and activities where national and international action might improve the situation.

The paper begins by looking at the history of educational research in Kenya, as much of its present character and concerns can only be understood by reference to the timing of its introduction and the manner of its evolution. It then examines some characteristics of past research for what it reveals about its content and style, its practitioners and preoccupations, and its organization and impact. The paper then moves to the present by describing the institutional structure of research today and some characteristics of its environment. This is followed by a review of some trends and issues that are likely to be important in the future. Finally, the analysis is used to suggest some ways in which the research environment might be strengthened.

A broad concept of research is employed that includes any systematic production of knowledge about the functioning and impact of the education system. The approach and emphases are deliberately chosen to complement the companion paper in this volume by John Nkinyangi.

The Research Environment

Origins of Educational Research in Kenya

The preservation of educational knowledge and its transmission from generation to generation has been part of Kenyan society, as any other, from time immemorial. The self-conscious dissemination of knowledge as an instrument of change beyond the primordial group is a more recent phenomenon, and Jomo Kenyatta can justifiably be regarded as the father of educational research as of much else in Kenya (Kenyatta 1961):

> Like any other Gikuyu child, therefore, I acquired in my youth my country's equivalent of a liberal education, but while I lived among my

[1]This paper draws on three earlier articles dealing with the environment of social science in East Africa: Court (1979, 1982); Shaeffer (1979).

> kinsfolk there was no obvious necessity for writing it down. . . I then realized the necessity to set down in black and white the knowledge which had remained in my head. . . . Before setting to work I realized the difficulty which faced me owing to my lack of training and accordingly set about finding ways and means to acquire the necessary technical knowledge for recording the information scientifically.

Despite the pathbreaking study that followed this loss of Illichian innocence described by Kenyatta, the growth of research on education in Kenya is largely a postindependence phenomenon. Several trends in the period since 1963 are especially responsible for the shape it has taken.

At the time of independence, an education system based on a racial structure, with limited opportunities for Africans and a highly Eurocentric content, did not need to wait for research to point to the required directions of change. In face of the task of producing teachers, equipment, and books for the rapidly expanding system, the development of research was not an official priority. Research tended to be an individual activity that focused on issues of classroom efficiency and reflected an inherited intellectual tradition that viewed child psychology as the pivotal discipline in educational research. The work was concentrated in the University Department (later Faculty) of Education, which was responsible for teacher training, or in the Institute of Education, which dealt with curriculum matters.

Increased interest in research and the movement away from a preoccupation with curriculum and teacher training toward a broader array of concerns was the product of several factors. First, it was not long after independence before problems began to surface that seemed to be related to the character of the education system. These included issues of access and equity, further training for primary school leavers, vocational education, school strikes, and so forth. The spectre of unemployed primary school leavers was dramatized by the National Christian Council of Kenya (1966) in a study entitled, "After School What?" The response to this was a conference at Kericho that was a watershed in the development of educational research because it demonstrated the contribution that educational research could make to understanding rural change (Sheffield 1967).

The emergence of a number of practical problems that required research elucidation coincided with the international expansion of American social science. The characteristic features of the approach — an interest in general theory building as the goal, individual behaviour as the unit of analysis, and quantitative methods as the form of assessment — led to an interest among American scholars in applying theoretical propositions in a cross-cultural setting by means of survey research. The most important example of this trend in Kenya was the child development work of the Whitings from Harvard who created a research centre in Kenya and over a 10-year period carried out research aimed at replicating Western-based studies of patterns of child rearing and the social conditions that produce them.

Interest in the relationship between education and national development was stimulated in the 60s by the onset of national independence and led in the field of economics to theories of human capital epitomized in the work of Harbison and Myers and in political science to the systems approach associated with the work of Easton, Coleman, and Apter. An important example of this kind of work was the Education and Citizen Project that surveyed the political attitudes of about 15 000 primary and secondary school students in Kenya and

Tanzania (see Prewitt 1971). A host of smaller-scale studies, carried out largely by American graduate students, sought to test theoretical propositions relating education to different aspects of national development in the Kenyan setting.

The third important historical strand in the evolution of educational research in Kenya was the growing importance of international aid to education and the interest of the international agencies in having more information than was usually available about the performance of the education system that their funds were designed to assist. This concern, exemplified by the World Bank, led for example, to the creation in 1972 of a UNESCO-supported (United Nations Educational, Scientific and Cultural Organization) planning unit in the Ministry of Education, which had responsibility for the production and analysis of relevant statistics on education, and to the establishment in 1975 of a National Committee on Educational Policy and Objectives in Kenya. Another example of international impetus to improved research was the International Labour Organisation (ILO) Commission of 1974. More recently the USAID-funded (U.S. Agency for International Development) Education Sector Analysis Project, as a by-product of its interest, has contributed to the development of improved data gathering on education at the Central Bureau of Statistics.

The fourth and most important general trend has been the expansion of government interest in research occasioned partly by its need for knowledge related to the management of an increasingly complex education system that now absorbs about 25% of the national budget. The expansion of the education system in the last 10 years is portrayed in Table 1.

Past Research

A recently published bibliography contains comprehensive coverage of research during the period 1967–80 and provides the data for an assessment of past work (Norgaad 1982). Analysis here focuses on the kinds of research that have been carried out, with particular attention to the type of topic addressed, the methodology employed, authorship, publication outlets, sources of funding, and changing patterns over time.

Scale and Scope

The most immediately evident point from the bibliography is the amount of writing that has been done on Kenyan education. The bibliography cites 511 separate entries for the period 1978–80. This level of output is broadly corroborated by a parallel bibliography that lists 672 entries for the period 1963–76 (Killick 1976).

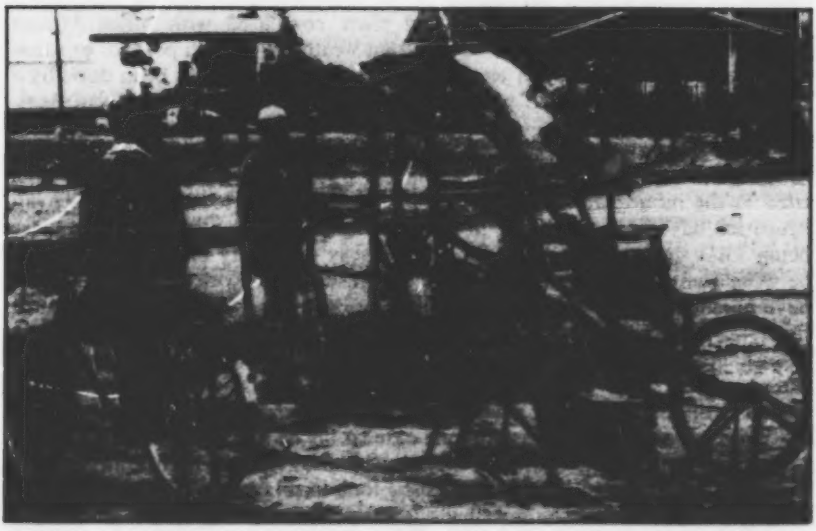
The most popular kind of work has been that which considers the education system as a whole. In terms of attention to a specific part of the system, the work has been spread relatively evenly across the three main levels of the formal

hierarchy, i.e., primary, secondary, and tertiary education. The apparently disproportionate attention to tertiary education is accounted for by the sizable number of studies on graduate teacher education; there have been relatively few studies on the University itself. Adult and nonformal education have received relatively less attention, and there has been virtually no interest at all in research on special education.

Topics of Attention

General policy questions have predominated in terms of the topics that have been addressed. Among specific topics of interest, curriculum and teaching methods have received most attention, with technical and vocational education and employment issues also prominent.

Changing patterns of research concentration during the past 12 years throw light on some of the influences at work. The interest in educational psychology during the late 60s and early 70s accounts for an emphasis on early childhood learning that has now declined. The international interest in attitude studies similarly accounts for a batch of such studies — mostly by American graduate students — in the same period. Studies focusing on a particular ethnic group or regional community were also a feature of the earlier period. Interesting in view of Kenya's current emphasis on technical education is the fact that this topic accounts for a substantial portion of research throughout the last 12 years and is not a new interest. Topics that have emerged strongly in the last 5 years include issues of access and opportunity, academic performance, and population education. In view of the importance of agriculture and language issues in Kenyan national life, there are surprisingly few studies on these topics and little research on the roles of women.



Problems of technical and vocational training have been prominent issues in Kenyan educational research. But policymakers wonder whether such research has relevance for the growing population of unskilled labourers.

Methodology

The most important general conclusion that can be made about the type of methodology used in the research is that the bulk of writing on Kenyan education consists of broad discursive commentary on issues of general policy, historical description, and case studies of particular institutions or situations. A particular interest of this analysis was to ascertain the number of studies that had used a quantitative approach of any kind in data collection and analysis. About 27% of the studies did so. This number is made up largely of PhD and MA level theses and the work of a small number of expatriate researchers.

Consistent with this conclusion is the fact that there has been very little secondary analysis of statistical data in the overall collection. The "tyranny" of quantitative methodology that is the alleged imposition of American graduate training does not seem to survive much beyond the demands of the thesis. It is also interesting to note that virtually no "action" research on education has been done or at least been publicized in Kenya.

Authorship

The most obvious point about the authorship of the works contained in the bibliography is the preponderance of non-Kenyan authors. More than half the total writing on Kenyan education in the period 1968–80 was done by non-Kenyans. This stark picture of imbalance in the production of knowledge has several causes. The prominence of non-Kenyans is a reflection of the historically limited opportunity for higher education and the fact that the proportionately few Kenyans who did go to university tended to go first into government positions rather than research in the early years of Independence. A second reason contributing to the imbalance was that until recently foreigners had greater access to research funds and consultancy contracts than their Kenyan counterparts; the pattern is well documented in Nkinyangi's paper (this volume). Third, Kenya has always been remarkably hospitable to foreign researchers and is a much researched place compared with other African countries with less tolerance and less pleasant weather. A fourth point of explanation is that a sizable core of the writing by non-Kenyans has been done by a handful of individuals who have been long-term residents.

Publication Sources

Several points can be made about the publication outlets for the works cited in the bibliography. In the first place, more than 100 theses on Kenyan education have been completed in the past 12 years with no less than 71 of these being PhD dissertations done for an overseas university and evenly divided between Kenyan and foreign graduate students. The majority of Kenyans who have pursued degree work overseas have studied in the United States; most of the remainder have worked in Britain. Foreigners doing thesis fieldwork in Kenya have tended to come from the same two countries, thereby creating rather narrow lines of scholarly exchange. The picture is now beginning to change with the increased presence of German and Japanese students and scholars, but there has been only one case so far of a PhD degree on Kenyan education from an African university outside the region. This was a Nigerian from the University of Ibadan who is the lone harbinger of a kind of research communication within the continent from which much could be gained.

A second instructive point about publication is that more articles on Kenyan education have appeared in social science journals than in professional journals dealing exclusively with education. This is a reflection of the types of

topic that have been preferred and also of the greater availability of social science than educational journals. It may also be the reason why what is often some of the most interesting research work does not reach the educational policymaker who is unlikely to be a reader of social science journals.

Third, the data confirm the dominance of foreign publishing houses in the dissemination of research on Kenya, although the number of books published in Kenya is not insignificant. Not surprisingly, non-Kenyans account for most of the work published overseas, although in the past 3 years a number of Kenyan researchers have begun to break into this erstwhile monopoly.

Funding

Analysis of past educational research in terms of its source of funding proved to be difficult because precise data were difficult to obtain. However, the companion paper by Nkinyangi provides some detailed and instructive information on funding patterns for recent research proposals in all fields that were cleared by the Office of the President. Three general points about the past work can be made with some confidence. In the first place, most of the research listed in the bibliography was not funded at all in the formal sense of dependence upon a grant for its accomplishment. Rather, it was self-generated as part of the author's sense of professional responsibility (King 1981). Second, most of the research that did depend upon grant funding, i.e., the overseas theses and a number of specific projects, gained such funding from overseas sources. Nearly all the grant-supported projects reported in the bibliography were carried out by non-Kenyans. Third, little of the reported work received financial support from Kenyan sources. This picture is now changing in two important ways. Government support for research on education, in the form of grants for particular projects, has increased during the last 3 years, and donor agency funds tend to be directed toward Kenyan scholars and researchers rather than foreigners.

The Education Research Community

Institutional Structure

The Kenyan educational research community is located in two main institutions: the university and the Ministries of Education. A third and increasingly important type are the various nongovernmental organizations, the most significant of which are the national religious organizations — the National Christian Council of Kenya and the Catholic Secretariat — and the national women's groups. A number of other institutions, especially government ministries, periodically carry out or commission research of an educational nature, but for purposes of present discussion they are not viewed as part of the core educational research structure.

University-Based Researchers

The Faculty of Education in Kenyatta College of the University of Nairobi has responsibility for all undergraduate and postgraduate teacher-training programs in the country and also runs a diploma course for post "A" level candidates. It consists of five departments with a combined staff of about 80 members. One of the departments is the Bureau of Educational Research, which has the explicit task of conducting and promoting educational research (Kenyatta University College "Calendar" for 1980–81):

> The functions of the Bureau are to carry out long-term and fundamental educational research, to assist public and private bodies in the application of the methods and results of educational research to ongoing problems, to train Kenyan scholars in the methods of educational research, to document and disseminate information from local or international sources needed by Kenyan researchers, policy-makers, and educators, and to provide a venue for the objective discussion and analysis of issues in the educational field.

Such comprehensive functions represent a tall order for an institution with a professional staff of seven, but, nevertheless, the Bureau does provide some leadership to research activity in the Faculty and seems likely to expand its role toward meeting some of the responsibilities with which it has been charged.

Virtually all the staff of the Faculty of Education did their first degree in East Africa (Makerere for the first generation and Nairobi for the younger scholars), and followed this with MA and PhD work at a diverse array of schools and departments of education in the United States and Britain. Their training tended to concentrate upon the traditional subjects of education — curriculum development, foundations, psychology — and training teachers and servicing the school system.

Other groups of university-based researchers are located at the main campus of the University of Nairobi. At any given time there may be two or three individual members of a social science department whose research interests are directed toward an educational issue. In addition, the Institute of Development Studies (IDS) has made education one of its priority areas of research concentration. For the past 10 years there have been at least three staff members or associates working more or less full time on educational research, and the IDS has over the years been the most consistent source of high-quality social science work on education in the country. Research at the main campus is distinguished from that of the Faculty of Education by its customary emphasis upon the interrelations between the education system and the economy and society, and issues of external efficiency, rather than a concern with matters of classroom pedagogy.

Members of this group typically received their training at well-known American universities. Their training generally included substantial exposure to behavioural approaches in social science and quantitative methods, but their intellectual home is usually close to the Marxist and Dependency schools of thought, and their research interests consequently centre on such issues as equity, cultural imperialism, social control, and theories of the State applied to education.

The University-based Institute of Adult Studies (IAS) located about 20 miles (32 km) from Nairobi also does research and has a mandate "to carry out research which will provide information necessary in developing program materials, identify training needs, and to evaluate program effectiveness" according to the list of "objectives" specified in the 1980 "Prospectus" of the IAS. The work tends to be practical in emphasis and to focus on such tasks as surveys of media usage and evaluations of literacy projects.

Government Institutions

The Kenya Institute of Education has primary responsibility for the preparation, testing, and improvement of curriculum materials for the national school systems. One of its six specified functions is "conducting research and preparing teaching and evaluation materials to support those syllabuses

including the preparation of books, teachers' guides, mass media programs and similar materials" (Kenya Institute of Education 1980, p. 7).

It has a staff of curriculum developers, virtually all of whom are former teachers or education officers. Curriculum evaluation is intended to be a central purpose and the Institute has a separate research section, but the Institute has yet to develop a consistent program of evaluation.

The planning units of the two Ministries of Education are a second governmental home of research activity. The units have a combined staff of 16 whose role, in keeping with the units' title, is the compilation of statistical information for the fulfillment of designated planning responsibilities and the preparation of data relevant to specific policy issues.

The Central Bureau of Statistics (CBS), which is part of the Ministry of Economic Planning and Community Development, is the data-gathering and processing unit for all ministries and, as part of its annual census of schools, gathers a wide array of information on the school system as a whole (CBS 1981). In the field of education, an impressive data-gathering facility does not yet have the benefit of corresponding provision for analysis. However, recent efforts have made it possible for University staff members to use CBS data for particular research topics. If this association could become a regular program, it would provide a steady source of increased understanding of the working of the education system.

The Research Unit of the National Examinations Council is the fourth centre of research activity in the Ministry of Education. Because of the significance of examinations in the Kenyan educational and social system, a high level of professional competence has been concentrated and developed in the unit. A core professional staff of nine work full time on the analysis of examinations, aiming both at improvements in their content as well as at their use in monitoring the quality of primary and secondary education.

The professional staff of the ministry units consists mostly of recent graduates of the University of Nairobi who have taken training courses at the Educational Testing Service at Princeton or the International Institute for Educational Planning (IIEP). Those in examinations research have a high level of statistical expertise that they maintain through concentrated research work and in-house courses. Those in the planning units tend to be heavily preoccupied with the rapid compilation of statistical information in support of Cabinet papers, the annual reports of the ministries or the needs of the latest World Bank or UNESCO mission, and have little time for self-generated research or reflective analysis of basic policy issues.

The Kenya Institute of Education publishes little and the planning units can only publish the annual report of the ministries, with the result that the bulk of published research comes from the University of Nairobi and Kenyatta College.

Non-Governmental Organizations

Some of the most interesting research being done in Kenya that usually does not feature in the published bibliographies is that which is carried out by nongovernmental organizations and in particular by the National Christian Council of Kenya, the "umbrella" social service organization for the Protestant churches, and their Catholic counterpart, the Catholic Secretariat. The research that these organizations carry out is usually stimulated by recognition of a particular social problem, e.g., the educational needs of pastoral communities

or abandoned urban children, and takes the form of a descriptive survey to ascertain the basic dimensions of the problem, followed by a participatory research exercise with clear implications for the action that is to follow. The research program is in fact usually part of a larger community development or social action program. Participants frequently work as a team and draw more for their inspiration on deep knowledge of the communities with which they are working, on common sense, and on participatory principles than they do on more conventional research methodologies.

Facilities for Research and Training

The different research institutions just mentioned are an established part of the Kenyan scene, and most of their capital and recurrent costs are met from local sources. Although they are all assisted by external funds for specific projects, they are not dependent upon such funds for their continued existence.

All the institutes have facilities for producing and duplicating papers quickly and efficiently. The CBS has teams of experienced research assistants who provide a steady data-gathering capability for educational and other censuses. Computer facilities provide processing "power" that is more than sufficient for the demands made on it, but delays and problems arise from inadequate software and technical support staff. The main library of the University of Nairobi, the educational library of Kenyatta University College, and the small specialized libraries of the institutes and departments between them receive many of the main international journals on a regular basis. Their book holdings do not compare with libraries in major universities in Europe or North America because of limited foreign exchange, delivery and cataloguing delays, and the general problem facing a fledgling profession of keeping in touch with new issues of a rapidly expanding literature. In other ways the university libraries make a useful contribution to the work of researchers. For example, publications include an Inventory of Research on Education 1900–76 (Ubima 1978), an annual index of articles on education from the national newspapers, "Higher Degree Theses and Dissertations of the University of Nairobi since 1970," and regular supplements to an original "Directory of Research."

Although educational researchers have been able to see international journals, they have not had a regular national outlet for their own work. For part of the period under review such an outlet was provided by two journals: the Kenya Educational Review and the Journal of Education in East Africa. Both have collapsed because of financial and organizational problems, and, with the exception of the Journal of Adult Education that barely qualifies as a research journal, there is at present no education journal for the publication and dissemination of research findings. The high cost of printing and the limited national and regional market for scholarly publications have made local publishers reluctant to take on academic manuscripts as well as journals and has brought about a situation in which they can only be produced by means of a subsidy or through an international publisher where American or European sales are assured.

A variety of types of training are provided by the different institutions mentioned. They include formal courses in research methodology, overseas training programs, on-the-job training methodology workshops and informal seminars. At Kenyatta College and the University of Nairobi the various methodology courses are undoubtedly among the worst-taught courses and generally serve to aggravate the fear of numbers that most students bring to the

course. The most effective types of training seem to be the kind of on-the-job training provided, for example, in the Examinations Research Unit, because participants know what they want to get out of the course for their daily work, and the overseas courses provided by the IIEP in Paris and the Educational Testing Service at Princeton. At a different level, the PhD training provided at Stanford, Chicago, and Columbia in the U.S. is probably useful, although the cost in terms of time and cultural and intellectual disorientation seems to be high. Small-scale seminars at the Bureau of Educational Research and the IDS have been beneficial in enabling researchers to discuss a particular issue or piece of work and have been a useful means by which researchers have kept in contact with each other. For individuals who have received different types of training, there are various opportunities to exercise or upgrade their skills, but there is not always great motivation to do this. In the Kenyan academic culture, if one has a PhD and tenure, the additional rewards to research are limited, and, furthermore, in a generally hierarchical society that gives deference to age and status, it is difficult for a qualified researcher to acknowledge that any further skills are necessary.

The vitality of the various units housing educational research has tended to be highly dependent upon the energies and abilities of particular individuals. This is particularly because in most cases the institutions have specific projects but have not yet been able to develop long-term research programs.

Funding Sources for Educational Research

There are several sources of demand for educational research in Kenya. In the first place the government, which has long been convinced of the importance of curriculum research, has slowly come around to seeing the usefulness of a broader "social science" research, especially for the purpose of project appraisal, monitoring, and evaluation. This was initially a tactical concession to the known predilections of donor agencies that were contributing development funds, but has now become, for some at least, a matter of conviction inspired by the view that research can throw light on particular problems or at least help to legitimize particular decisions. Examples of government interest in research on education include the co-optation of researchers onto government committees, as occurred most notably for the 1976 National Committee on Educational Objectives and Policies (Government of Kenya 1976), and the periodic requests for research on particular issues of topical interest. Recent examples where assistance has been sought from individuals and institutions include student disturbances, university leaver employment patterns, and issues relating to the creation of a second university in Kenya.

However, the magnitude of government demand should not be exaggerated. In relation to the volume of taxpayers' money devoted to the education system, the proportion allocated to research is miniscule. The task of simply maintaining a massive and expanding system leaves little time for research programs, and a belief in the usefulness of research has not reached the level of institutional conviction that has led neighbouring Tanzania, for example, to attach evaluation units to each of the nine sections of its Ministry of National Education and to establish a coordinating Centre for Research and Evaluation.

As evidenced in the analysis of past research, self-generated demand by University teaching staff has in the past accounted for a large proportion of the total research on education that has been carried out. Although this kind of

"scholarly" research is now less important than before in the overall pattern of demand, it remains a part of the motivation for some and is especially useful in the production of teaching materials.

The biggest single source of demand for research comes from the various technical assistance agencies that, while working with one of the Ministries of Education, frequently require independent or collaborative assessments of the projects that they are funding. Foremost among the agencies that contribute to this demand are the World Bank, the ILO, USAID, the Swedish International Development Agency (SIDA), the Canadian International Development Agency (CIDA), and the various United Nations agencies. Much more than in the past, these agencies are trying to anticipate and measure the social and educational impact of their projects. Until very recently most agencies imported all their consultants to provide the required expertise, but several as a matter of policy now seek out local researchers as consultants for their projects. Various national agencies, such as the Christian organizations already mentioned, also have a variety of projects on which they seek research assistance for evaluation or elucidation.

Although the various agencies draw upon local scientists for work on specific projects, they also fund and seek local assistance for less bounded work on broad areas of policy interest. A common pattern of this type of demand for educational research is a project that is subcontracted by a funding agency to a particular European or North American University. It is usually led by a scholar from that institution who then searches for local collaborators. An early example of this was the influential ILO/IDS Sussex study, "Employment, Incomes and Equality in Kenya" (ILO 1972). A recent example of a 1980 project was the World Bank/Oxford University study, "Employment Consequences of Educational Expansion." Among other externally inspired projects for which local collaboration was sought were a study on educational inequality and an interest of the IIEP in applying its well-tried model of higher education and labour development to Kenya.

The various North American and European foundations also support educational research and training through the provision of grants to individuals, departments, and research institutes. Nearly all the support for this kind of university-based research and training in the last 10 years has come from the Carnegie Corporation, the Rockefeller and Ford Foundations, and the British Overseas Development Administration. More recent arrivals on the scene have been Canada's International Development Research Centre (IDRC) and the various German assistance agencies, such as the Deutsche Gesellschaft fuer Technische Zusammenarbeit (GTZ) that now makes the biggest single contribution to educational research at institutions of higher education in Kenya.

An increasing part of the demand for general social science work in Kenya is now channeled through private consulting companies that enter into contracts with government, the private sector, and international agencies. Most of the Kenyan companies have been registered in the last 3 years, and several are owned by present or former University faculty members. Some have sizable capital outlays in offices, equipment, and permanent staff and play a substantial and regular role in linking social science expertise to development projects. Others have little more than a name and a letterhead, came into existence in a speculative response to a specific project, and have a precarious existence. All tend to draw upon the University social scientists. They have not yet had much

impact upon the pattern of demand for educational research, but can be expected to do so in the future.

Impact of Research on Practice

Assessing the precise impact of educational research on practice is a difficult and subjective task. The major historical developments in Kenyan education — Harambee secondary schools, the institutes of technology, the removal of primary school fees, the "abolition" of the "new mathematics," and the introduction of an 8-year primary cycle — reflected government perception of public demand rather than compelling research evidence. Other major developments, such as the establishment of village polytechnics, the introduction of technical and agricultural secondary school streams, and the establishment of a media centre, were ideas that originated outside Kenya. Most new policies did not arise out of a careful process of weighing research-based options but out of more immediate political considerations.

However, it is possible, for example, to point to the occasional instance where research findings have been the explicit basis for new practice. The outstanding example of this in Kenya is the research on examinations that has over more than a decade analyzed the relationship of examination content to purposes of relevance, efficiency, and equity in the educational system. It is one of the rare examples in Kenya of a long-term research program in which added understanding each year is incorporated into practice and into modifications of the research program itself (Somerset 1974; Makau and Somerset 1978). Other less dramatic examples of impact include some research on preprimary education, a study of the constraints to female access to science education, and the introduction of a career information system in Kenya (Krystall 1980).

There are, thus, some examples of the research of an individual or team leading to a change in educational practice, but this is not usual. Change in the field of education tends to arise as a result of small incremental advances in understanding rather than from a sudden technical discovery. For this reason the most important impact of educational research in Kenya has probably been upon the *climate* of educational opinion in the country (Kinyanjui 1977). Again, one can never conclusively prove this kind of connection, but those involved know it occurs and can connect the work of a handful of particular individuals to enhanced public and professional awareness of the issues associated with their research. The contribution of these individuals to informed opinion occurs in four principal ways. In the first place, their work dominates the reading lists of education courses at the University. Second, in addition to their formal teaching they tend to be called upon for public lectures and contributions through the media — television, radio, and the newspapers — and in other national forums. Third, they are sought out by a large number of representatives of various technical assistance agencies and spend an inordinate amount of time in the task of educating these missions. Finally, and most important, they are part of a single small social and professional network. As a result, researchers have a degree of access to policymakers that is not shared by their peers in most parts of the world.

The Research Climate

The formal institutional structure that houses educational research has been considered and the sources of demand for it have now been examined. The

continued health of educational research depends in large measure upon the extent to which the University provides a supportive professional environment and the government ensures an atmosphere of tolerance for research.

The University

Historically, the University has encouraged research as a means of Africanizing the curriculum and demonstrating the relevance of the institution to practical education. A measure of the continuing strength of University support for research is the proportion of financial resources that it is willing to devote to it and the quality of staff it can attract to it. On these scores the record is mixed. The University has provided a number of establishment positions for educational researchers at the Bureau of Educational Research and the IDS, but has provided very modest funds for research itself. For the past 2 years the funds in the research vote ostensibly earmarked for allocation by the Deans' Committee have been absorbed into the general running of a financially stricken institution. In the face of expanding enrollments and soaring costs, university administrators inevitably have given priority to teaching rather than to research needs.

The education research community worldwide is sustained by a set of professional norms of which the most important are research productivity, the peer review process, and promotion by merit. In this connection, the most important general feature of the academic environment is the relative weakness of the incentive for scholarly research and writing. Not only is research difficult to organize and time consuming, less rewarding financially and more demanding than consultancy work, and faced with problems of finding publication opportunities, but additionally it has not featured very centrally in the determination of faculty promotions. Some scholarly writing is a necessary but not sufficient condition for promotion. The University tends to emphasize teaching and administrative responsibilities, along with seniority, in recruitment and promotion. The university-inspired pressure to write that faces academic researchers in the U.S. is not echoed in East Africa. This has advantages and disadvantages. On the one hand, it leaves scope for quality rather than quantity in production, but on the other hand it deprives academic departments of any sanction for the encouragement of scholarly productivity to balance the inducements of external demand. Where promotion depends only partially on research productivity and where dismissal for incompetence is rare, department chairpersons and research institute directors have limited resources for encouraging productivity.

A further disincentive to research is the University administrative structure. Because of the hierarchical quality of departmental organization, decision-making tends to be centralized and to reflect the diffusion of chain-of-command civil service norms within the institution. The most important effect is the blurring of boundaries between academic and administrative arenas and the tendency for inherently academic matters to be decided by administrative action. At the heart of this structure is the University finance office that, with its regulatory manner and time-consuming procedures, is widely seen as serving more to delay than to facilitate the implementation of research projects. Its processing of research funds, as required by University regulations, is one of the greatest single sources of frustration among researchers.

Several factors in the academic environment relate directly to the development of peer review. In the first place, peer review is difficult by definition

where researchers form a small and intimate community concentrated in a single faculty. Second, the presence until very recently of expatriate majorities in many departments created a difficult psychological climate for peer review. Third, hierarchical styles of departmental management tended to mitigate against collective decision-making. Fourth, the University emphasis on teaching and administration meant that research and publications did not provide the kind of relatively tangible basis for peer review that might otherwise be available. Finally, awareness of the operation of ethnic criteria and personal influence has tended to place a high premium on formal qualifications in initial judgment of an individual's qualities of mind and experience.

Government

The increasing involvement of government in the central planning of education, as of much else, created a substantial information need that research is expected to supply. The crucial importance of education in the opportunity structure and national ideology of the country ensures constant government interest in knowing how the system is performing. Specific influence upon research stems from the government's financial contribution, its promotion of particular types and topics of research, and from its ultimate determination of the political context that decides the terms of intellectual inquiry.

One area of government influence is on the choice of research topics, the style of research procedures, and the form in which findings are presented. The government sometimes publishes a list of research priorities and the National Council of Science and Technology provides coordination for all research done in Kenya. In practice, the areas of concentrated attention are worked out in discussion between university departments and research institutes and planning units of the Ministries, whereas the actual project tends to rely in large measure on individual initiative. Ultimate government control is assured by the requirement that projects receive official clearance, and increasingly research has to be part of a program of a university department, government unit, or research institute.

The government attitude toward research is characterized by ambiguity. On the one hand, research and ideas are sought for their planning utility, and on the other hand, tolerance of the government for opinions that imply criticism is limited. Because the University of Nairobi is a single institution located in the capital city, its closeness to the seat of power and the centre of events gives researchers a political visibility and occupational vulnerability that would be less if the University were located elsewhere, or if there were several such institutions in the country. (A second university in Kenya is the subject of current consideration and likely approval by a Presidential Review Commission.) In the intimate and centralized political structure of which the University of Nairobi is a part, not everyone in the government is always willing to view the advocacy of new ideas and strategies as the essential responsibility of scholars and researchers, and instead they are sometimes quick to view criticism as tantamount to subversion.

The Economy of Affection

One of the pervasive but relatively invisible features of the climate influencing the generation and conduct of educational research is the particular character of administrative behaviour that affects all institutions and social relationships

in Kenya. This is the system of reciprocal relationships based on kinship, residence and religion that has been termed "the economy of affection" and that tends to override all other loyalties (Hyden 1980). It constitutes a powerful social force that provides a guide to action that penetrates all spheres of life. One effect relevant to educational research is a situation where extraorganizational factors are critical in shaping institutional behaviour. Institutions become subject to patterns of conflict between the salient groups in society with the result that their positions become part of localized power struggles that may have little to do with the qualities required for a particular job. One common result is that key actors in research institutions can be moved in or out with little regard to the health or continuity of the institution. At the same time officials who are reform minded "find themselves constrained by a sociocultural system that offers them little support to the building of institutions equal to the tasks which they wish to pursue" (Hyden 1980). A further consequence of the influence of this kind of administrative culture is to weaken the legitimacy of national institutions to the point where their resources become targets for transfer to stronger familial institutions. This gives rise to what in Kenya is known as the "*kula*" (literally, eating) phenomenon in which individuals and groups take advantage of public resources for private purposes beyond those that are officially prescribed, and the process, although not officially tolerated, survives in widespread practice because the family institutions are invested with a "higher morality" than the newer public ones. To the extent that research funds and institutions are seen as part of the modern national or international domain they, too, are viewed as resources available for acquisition. This topic deserves more sustained analysis than is possible here, but is mentioned to draw attention to an important feature of the research context.

Beyond the boundaries established by the three factors mentioned are the completely uncontrollable forces. The final determination of issues of feasibility, priority, and approach — which research topics are addressed, what methods are adopted, and which results are considered — frequently depends as much upon the interests of particular groups, and even individuals, as it does upon the presence or absence of other objectively desirable conditions. It is useful to try and make explicit some of these group interests, but it is also necessary to recognize that in the final analysis they are elements of the environment that are either unpredictable or unquestionable.

Trends and Issues

The Challenge of Institutionalization

The most important achievement of the past 15 years has been the expansion of research. Accompanying this growth has come a corresponding development of facilities and infrastructure within the institutions that have been described. Education research has established itself as a valued activity. In the early years of independence, research was generally perceived to be something of a luxury. It was viewed as an activity of individual professors, a necessary adjunct to the teaching role, but not something that could contribute much to the improvement of the education system. It, therefore, tended to be ignored by most government officials. The change of recent years is the incorporation of educational research into the process of policymaking. Some people in the

Ministry of Education now care about educational research and are willing to devote some resources to it.

However, although the total number of professionals in the institutions mentioned is over 100, the number actively involved in research is less than a quarter of the total, the number whose work is recognized and utilized within the country is probably half as much again, and the groups who have established reputations on an international level can be numbered on one hand. In short, the research community is small despite the existence of a basic infrastructure of facilities. Few would argue that the research community adequately meets the information and analysis needs of a large and complex system. Some of the difficulties are part of the historical legacy, whereas others are structural.

Among the continuing constraints is the difficulty experienced by education in recruiting the best talent into research and teaching. Education falls at the bottom of the ranking list of University departments as perceived by students and it tends to be a course of last resort. It is particularly difficult to find people with mathematics or science ability to interest themselves in educational research with the result that few ostensible educational researchers have much facility with statistics. The problem is compounded by the competing claims within the Education Faculty between teaching and research. More than the other teaching departments of the University, the Faculty of Education feels that its raison d'être in teacher training behooves it to give the highest priority to teaching, which often occurs at the expense of research. An associated difficulty is the marginal position of "education" as a distinctive discipline and the tendency for other social sciences to ignore the subject of education. In Kenya, the intellectual gap is intensified by the physical separation of the Faculty of Education from the rest of the University. Few graduates from the social science departments are opting for research experience in the field of education. One result is that Kenya does not have a single educational economist with PhD-level training, which is surprising in view of the scale of public and private investment in education and the complexities of financial planning that face the system.

Another problem that appears to be intensifying is the shortage of local funds for research. In a situation where higher education itself is facing severe financial pressure, research is one of the first activities to be cut back. Shortages of foreign exchange are likely to have a particularly severe effect on what can be achieved through self-reliance in the future. Such shortages restrict the purchase of typewriters, paper, vehicles, the exchange of journals with overseas universities, travel by staff members, and a variety of activities or services that are simply taken for granted by researchers in more wealthy contexts. Scholarly communication is further hampered by the escalating cost of travel and political and other impediments to it. Travel between Nairobi and the capital of neighbouring Tanzania, formerly a 1-hour flight, now may require 2 days while passing through a third country. The cost of the air travel necessary for communication within a large continent is now putting a distinct brake on scholarly communications. The cost of petrol similarly rules out large-scale national surveys that were in the past a favoured type of individual research.

Domination of External Demand

Because local resources for research are limited, external sources are tending to dominate the pattern of research funding and this has a number

of implications for the future shape of research activity. Although the external agencies do not operate in concert, they tend to share a concept of development that views the provision of information as the key to the solution of problems. This philosophical predisposition is part of a desire to be responsive to national research priorities and is reinforced by the practical need of most agencies to be able to claim visible and fairly immediate results. The combined effect is to produce a powerful demand for a particular type of research — feasibility studies, project appraisals, and project evaluations — as well as preferred methodologies. In general, there are advantages to a demand that leads to practical and immediately relevant work. In a context like the Kenyan one, however, there are dangers in a situation where research is perceived and justified exclusively in terms of its problem-solving capability. One is the risk of diminished credibility arising from the fact that it cannot provide the "developmental answers" that may be expected. A second is the risk of extinguishing other types of research, e.g., basic and theoretical work, on which the ultimate strength of the educational profession depends.

Technical assistance agencies constitute a powerful reward structure that inevitably influences the content as well as the style of research. Because technical assistance agencies see part of their responsibilities as keeping in touch with the major international concerns of educational research, they tend to favour these issues when considering support. A sequence of international fashions or emphases has shaped educational aid and, hence, the direction of research in the past 10 years in Kenya as elsewhere. The path has been from higher education, to secondary, to primary, to basic, to nonformal, to vocational, to preschool education. Making support available for the study of these topical concerns is a helpful means of concentrating local attention on the critical global issues of our time that are, after all, fairly widely shared. However, from the standpoint of the long-term development of national research agendas, excessive provision for one topic or one approach can distort the natural evolution of the way in which local realities are translated into research projects. Where a research community is strong and heterogeneous, the concentration of resources on imported concerns and frameworks does no more than provide useful emphasis within a variegated overall pattern of research, but where, as in Kenya, the community is small and new, it can preempt the research agenda and preoccupy the research community.

One important general effect of powerful external demand is to increase the proportion of total work that is commissioned by an outside body rather than initiated within the country. Frequently, of course, university and government departments or individuals will be involved in the conception or design of the research, but the locus of initiative tends to be external rather than internal in a situation where demand for research services exceeds the supply of Kenyan researchers.

A further tendency of external demand is a preference for large-scale activities that take inadequate account of the absorptive capacity of the research environment. Until recently organizations seeking evaluations of their projects or wishing to promote research were content to add to demand without a corresponding contribution through training to the supply of individuals who could do this work. Where the goal is the encouragement of scholarly research, or research on a small project, the effect is to increase the level of competition for scarce individual researchers. Sometimes not only does it preoccupy trained researchers, but it may also set back training programs by pressing into service

on projects individuals who leave themselves little time for their study.

The extent to which educational research becomes established and legitimized depends upon its ability to create its own professional reward structure and means of self-expression. Without local recognition, encouragement and support, it will remain an artificial activity heavily dependent upon foreign funds and responsive to concerns emanating outside Africa.

Contract Research and Problem-Solving Preoccupation

One consequence of the problem-solving conception of research that is shared by donor agencies and government alike is the dominance of contract and consultancy work and the consequent commercialization of research. Able researchers can multiply their salaries through the judicious selection of international consultancies. Projects organized by the United Nations agencies in particular have been especially influential in their impact on the overall incentive system for research. Their rates can command the best available talent at all levels. In one sense, this marks the beginning of an overdue move toward greater equity in the allocation of rewards and the division of labour between producers of knowledge in the poor and the rich countries. The dilemma is that such rewards can also generate serious friction within a country because of the invidious distinctions that they provoke in institutions. Their overall effect is to expand the scope of commercial norms to the point where anticipated fees, rather than peer recognition or a desire to contribute to knowledge, are becoming the mainspring of research activity. One other result of this is the danger that the local incentive structure will be simply submerged because of its inability to compete.

The state of competition for research services, which results from excess demand, has other consequences in addition to raising the price of research. It leads to individual overextension because able individuals face more requests for research than they can possibly carry out. Sometimes the requests respond to recognized areas of scholarly competence, but often simply reflect the need for someone to do a job. Most able educational researchers are simultaneously involved in several pieces of commissioned work, which are entered into either on a personal contract basis or within a general contract awarded to a department or research institute. These commitments come on top of a demanding set of academic responsibilities and extensive family and community obligations that stem from educated status. A second point is that the relatively small pool of educational researchers means that educational researchers tend to be requested to provide research advice across a wider range of topics than their counterparts elsewhere in the world. The result is a tendency toward the dispersion of interests so that a high degree of specialization in either topic or methodology is not yet a feature of the Kenyan research environment.

At a more general level, the establishment of quality in educational research is threatened by the dominance of contract research in the total research culture. It is typically after-the-fact research relying on secondary sources because of the shortage of time for conducting systematic and sustained data collection. Furthermore, it produces a standing temptation to generalize beyond the claims of the data (Starr 1974, p. 401):

> The capacity for suspending judgment is limited; they must reach conclusions on whatever evidence is available within a relatively short period of time. This inevitably affects their standards of proof; the threshold

at which they become satisfied that an analysis is sustained by the evidence is necessarily lower.

Finally, the contract emphasis affects which issues within a topic are examined and who examines them. The pressure to provide "answers" and recommendations that Kenyan researchers continually face can lead to a concentration on factors that are subject to manipulation rather than on less accessible institutional processes or more fundamental aspects of the social context. One result is a rather technocratic conception of research in which both the problems and the solutions are perceived to lie exclusively within the framework of established institutional arrangements and to be amenable only to the attention of a limited group of professionals.

Fate of the Educational Research Profession

The combined influence of government and agency demand for educational research is also having a number of effects upon the development of the research profession. Central to this development is its ability to reproduce itself through teaching, the creation of an incremental body of literature, and the institutionalization of norms of professional practice. Yet a general consequence of the prevailing emphasis on contract research is the tendency it has partially created to separate research from a university base. Evaluation and contract research by definition have their source outside the university, which means that the reference group for scholars is not their peers but the sponsors of the work, and the tendency for exclusiveness is increased when, as is frequently the case, it is labeled as confidential or restricted. Because much of the work commissioned under the aurpices of technical assistance agencies is restricted in its circulation, it does not add to the stock of publicly available information that can be incorporated into teaching texts. The idea of research output as the principal criterion of academic productivity and professional assessment is difficult to implement in a context where service work occupies a large proportion of a researcher's time. At the same time research institutions aspire to autonomy within or outside the university, individual researchers seek private arrangements with funding organizations, and the organizations themselves try to avoid the necessity of dealing with the university. The desire to bypass established institutional structures is often motivated simply by the wish to avoid bureaucratic delay. As a general tendency, however, it has significant implications. It can stunt the growth of the institution on which elsewhere the research enterprise has relied for self-renewal and development.

The absence of long-term or basic research in the Kenyan setting is also partly because the relevant institutions have never tried to formulate real research programs as opposed to lists of possible priority topics. As a result they leave themselves vulnerable to the individualism of their professional staff and also leave the staff members vulnerable to the lures of contract and evaluation research. A program of research implies both long-term commitment and the accumulation of data by means of a series of questions in which the answers to the first set guide the formulation of those that follow. The only examples of this kind of research in Kenya have been the research on examinations that was mentioned earlier (Somerset 1974) and the child development research of the 1960s that was led by a team from Harvard University. (For an evaluation of this project see "Carnegie Quarterly," 1979, 27(4).) There

seems to be great scope for the development of real research programs in broad areas of theoretical and practical concern.

Emerging Debate About Research Technology

One of the surprising features of the Kenyan research environment has been precisely the absence of much public discussion about the kinds of research technology that make most sense in Kenya and about the conditions that foster particular types. One reason for this lack of local attention to the "environment" issue is because those who were historically responsible for the development of educational research in Kenya have tended to treat it as a set of skills and a body of knowledge that are universally desirable and can be applied in any circumstances. To the extent that local circumstances departed from those of the countries where the techniques originated, it was assumed that these differences would wither away under the normal course of development.

It has long been clear that many of the conditions that surround educational research outside Africa — economic resources, a favourable political context, established academic traditions, administrative infrastructure, and popular understanding, to name the most obvious — were not immediately available in Kenya. With the benefit of hindsight, it is now equally clear that their continued absence or weakness is not a transitory phase or abnormal condition. Shortages of foreign exchange, political pressures, management styles derived from resource shortages, the operation of ethnic influence, impediments to scholarly communication, and so forth are part of an interrelated set of factors that constitute a condition of underdevelopment that is not going to disappear quickly. It is the domestic environment of educational research.

Recognition of the uniqueness of the Kenyan research environment is leading some to question the relevance of some of the research techniques that have been adopted in general practice. At present the embryonic debate is characterized by a high level of polarity between acceptors and rejectors of dominant inherited research techniques. What has been lacking so far is explicit and systematic attention to the issue of what kinds of research make most sense in relation to the particular conditions and needs of Kenya. One approach to this issue is to ask which techniques are universally applicable and whether the conditions for their application exist or can be created. To the extent that the country is clear on the desirability of particular approaches, the task is that of reproducing in Kenya the conditions on which they depend elsewhere.

However, to the extent that there is doubt about the relevance of particular approaches, or the desirability of reproducing the conditions on which they depend, the alternative is to reverse the process implied by any simplified analysis of the research environment and let existing social conditions, rather than preconceived notions of what might be useful, dictate the kinds of research that are developed and deployed. (The point that the task cannot consist of simply trying to recreate Western research environments in Africa is forcefully made in Diambomba (1979).) The general challenge is to identify those ingredients of the research infrastructure that can be strengthened for the betterment of research and those elements of the research model that require modification to respond more adequately than at present to the conditions presented by the Kenyan surroundings.

The foregoing, rather bleak, recitation describes tendencies and trends, not a hard-and-fast situation. I have concentrated on problems rather than achievements because the purpose has been to try and highlight some features

of the Kenyan environment about which it is important to be aware as one contemplates ways in which educational research in the country can be strengthened and made more effective than it has been.

Strengthening the Educational Research Environment

The preceding sections have tried to analyze the environment in which educational research in Kenya takes place to identify some of the conditions that influence the pattern of research activity and also to assess the extent of its impact, the way in which it occurs and the relative effect of different kinds of influence. This analysis has permitted some conclusions to be drawn about the progress of educational research in Kenya. It has also revealed some of the unresolved issues facing its future. Despite the complexity of the issues, the situation is not one for despair. The review of the educational research scene in Kenya suggests that in practice two broad kinds of condition combine to determine what is possible. In the first place is the set of "givens" associated with prevailing culture, traditions, economic circumstance, and group interest. A second kind of influence is added by educational and social policies themselves: the value assigned to research, the use made of it, the concept of it by a national government and populace, and the behaviour of technical assistance agencies. Changes in these conditions in the past 10 years make it clear that educational research is not in the grip of immutable environmental circumstance or an overpowering foreign model, but that it can be modified by action. Many of the conditions are amenable to planned change. A variety of actions, some described in this paper, have led to increased interest in and opportunity for educational research.

From the preceding analysis it is evident that in the past 15 years the general idea that educational research is a useful activity has spread among educators and found expression in an impressive volume of writings. Some of the preconditions for sustained development have come into existence. An infrastructure for educational research — university departments, research institutes, data processing facilities, and so forth — is already in place. Yet it is also clear that other elements of research capacity are less strongly established or are totally absent. Officials who believe in research for policy improvement rather than policy justification are few in number. The research community itself is small and exclusive. Institutionalized professional research roles exist but are rare, and the energies and interests of researchers are dispersed across a wide range of activities. Research itself has a technocratic cast stemming from the influence of contract demand, and the whole research enterprise relies heavily upon external support for both funding and interest.

The analysis points in the direction of some new purposes for educational research and to some means for achieving them. The general aim has been summarized by one of Kenya's social scientists (Anyang'-Nyong'o 1978, p. 79):

> For it is only by trying to create a community of "home grown" researchers and scholars, capable of initiating, organizing and executing their own research into indigenous socioeconomic issues will we also have a local reservoir of social literates from which the state can recruit its planners and the university its researchers and teachers. The need is to begin a process of self-centred academic growth in terms of intellectual formation — through local graduate schools, research conception, organization, and

execution — through native researchers and institutions; and research communication — through local journals and publishing firms.

In the case of educational research two purposes seem especially important as guides to future action. First, it must be clear that the contribution of educational research is rarely to provide definite answers to particular problems, but rather to offer a better understanding of them through the provision of information that can improve the quality of the debate in which policy arises. Its contribution to policy relevance is through the building of a body of knowledge and the definition of alternative options. Second, this potential is established through the acquisition and application of a broad range of analytical skills and understandings by a wide variety of people. The achievement of these purposes calls for a number of measures for strengthening the research environment:

• *Consumer constituency:* Because public recognition of the contribution of research to development remains limited, for understandable reasons, it is important to pursue ways of reducing skepticism. Among such measures are continued emphasis upon the research component of training programs and educational projects, not simply for those in research careers but for all who work in the field of education. More broadly, ways need to be sought of expanding the opportunities for participation in research by those outside the usual institutions. If people see that research can have a bearing on their lives, they are likely to want to do it and use it.

• *Fusing of social science and education:* One means of strengthening this constituency is by making social science methods and appreciation an integral part of the training of professional educators. Few of the products of a Faculty of Education will become full-time researchers; but many will be required to consider scattered and conflicting pieces of information, to assess their relative validity and to make informed judgments; and all will benefit to the extent that they are able to recognize the impact of the social and economic context upon student performance and classroom conditions. Some of the methods of social science and the stimuli of a scientific imagination can be assets in this task.

The reverse of this approach is to encourage attention by social science departments at the University to educational issues. In the Departments of Economics and Sociology at the University of Nairobi, the dedication of some fellowships in the MA program to individuals interested in analyzing educational issues is already one means being tried for breaking down the barriers between "education" and "social science."

• *Incentives to quality:* Although it is important to encourage the widest possible range of approaches, it is essential that the environment can encourage and identify quality in research. A major condition for the continued development of educational research are mechanisms for strengthening professional research roles and intensifying a sense of research vocation.

The encouragement of research-based literature is perhaps the most important of the steps that can be taken to strengthen the incentive to scholarly work. Long-term subsidies to a journal, inducements for the writing of books and articles through writing sabbaticals or more direct means, can provide the necessary start. One type of writing that could make an especially important contribution in Kenya to the definition of the research profession and the integration of social science and education would be a text on the methodologies and philosophy of educational research. A research association can sometimes provide important support to professional roles, and the mooted

Kenya Education Research Association, if it materializes, could become an important feature of the Kenyan research landscape.

• *Special attention to quantitative methods:* There are limits to any labour-planning approach to the development of research capacity that tries to produce some optimum mix of theoretically desirable research skills. Among such limits is the fact that within the research community a variety of views coexist on what types of research are in fact most needed. Similar diversity exists among the external agencies that encourage research, for example, between the World Bank and the Swedish Agency for Research Cooperation with Developing Countries (SAREC). Furthermore, whatever an individual's research specialization might be, he or she is likely to be involved in a broad range of tasks that only rarely utilize that particular set of trained skills. Nevertheless, taking the spectrum of research approaches that are possible in any situation, labour planning is not needed to recognize that there are gaps in Kenya and that one such gap is quantitative skills. The reasons for their absence or relative weakness, partly choice and partly circumstance, were discussed earlier. The consequence is a dangerous communication gap between Kenyan researchers and those of international agencies that requires attention. It is no exaggeration to say that some of the research techniques that are often favoured by some international agencies are largely incomprehensible to most educational researchers in Kenya. This is, of course, as much a comment on the type of methodology as on the researchers, but it serves to underline an important point about the distribution of knowledge. Nevertheless, accepting the validity of much of the criticism that has been leveled against some types of quantitative approach, it can now be recognized that several of these techniques have a demonstrated usefulness and cannot simply be discarded as part of the colonial imposition. If it is concluded that some have use, steps need to be taken to ensure that they are included in the Kenyan research armoury, if only for self-defense.

• *Secondary analysis:* One of the characteristics of Kenyan educational research is a penchant for data collection at the expense of analysis. This is true of most thesis research, where the predominant effort of the researcher goes into collecting the data, and shortage of time tends to foreclose on the analysis of the mass of assembled information. It is also true of most contract research, which by definition is struggling against deadlines in all phases of its research process. Support designed explicitly as an encouragement to the analysis of existing data could assist each of the emphases that have been mentioned. At the same time workshops and projects that use different data processing techniques can help to extend computer literacy and add necessary understanding to the benefits and limitations of this particular technology.

• *Regional and continental interchange:* The barriers to research communication that have been described should not be permitted to deter the promotion of regional and continental contacts in educational research. Workshops, conferences, journals, and scholarly exchanges are among the proven vehicles of such mutual self-help.

• *Expanding the number of practitioners:* Systematic consideration of research training is an urgent necessity. The escalating costs of overseas training coupled with the enhanced ability of local institutions to mount training programs make it timely to investigate the range of possible alternatives to protracted overseas courses that may be relatively more effective for the training of future educational researchers. Both the University of Nairobi and those who support graduate training have paid lip service to the

idea of reducing dependence upon a single form of overseas training and to such notions as combination degrees that involve shorter and more intensive periods overseas than is currently the norm, but these ideas have not yet received much practical implementation.

The organizations that provide much of the external demand for educational research have in recent years come around to a recognition of the importance of contributing to the supply of researchers and to the development of research capacity on which the long-term quality of policy research ultimately rests. The World Bank decision to include a training component in its educational projects, the new attention to training by the IDRC, and the general concern about research environments exemplified by this publication are important steps toward greater respect for autonomous research positions.

One of the most useful means of external contribution to research training is the secondment in long-term teaching positions of methodologists and teachers of proven competence. One of the ironies of university development in Kenya is the fact that, in an earlier epoch of abundant funds for visiting professors, the University was not in a strong position to make use of them, whereas now that the University is actively seeking assistance to hire specific specialists, the necessary external funds for recruitment are no longer available. Support for a visiting research specialist is the category of individual most sought by University officials and the least acceptable to international agencies. The logic of an agency that says it is supporting Kenyan research capacity by not providing a particular individual because he or she is not a Kenyan had relevance in an earlier era of expatriate excess, but seems more like paternalism at a time when a country is genuinely seeking by all possible means to accelerate the creation of national research capacity. One experienced and competent research methodologist on a 2-year assignment is worth any number of short-term visitors as workshop leaders.

• *New funding mechanisms:* The bleak economic circumstances likely to face Kenya in the immediate future give little grounds for expecting an increase in local support for educational research. If research projects that require funding are likely to remain dependent upon external sources, the task is to find mechanisms that minimize patron–client relationships, strengthen the collective self-reliance of the research community, and avoid excessive commercialization of the activity. One mechanism is the channeling of funds from multiple sources through a national organization, such as a research association, council, or other relevant institution. Kenya has moved in this direction with the inauguration of both the Kenya Educational Research Association and a research awards scheme that is being jointly funded by CIDA, the American Rockefeller Foundation, and the German GTZ and is run by a panel of representatives interested in research. Such organizations are not immune to the influence of personalized factors, institutional ambition, or external manipulation, but hold out some hope of being more supportive of a collective research community than the bilateral relationships between single agencies and individual researchers that have been a feature of the past.

There is an urgent need for analysis that fully specifies the assumptions and associated administrative culture and logistical support structure that are required by the main research technologies of the Western world. On the basis of such work it will be possible to decide which technologies are most useful and what conditions they impose. At the same time it is essential that it is not assumed that what is required is simply what is "missing" in a comparison

between the Kenyan and the Western research environment. Rather, we need to be looking out for new ways of thinking about research and its application that are suggested by conditions in Kenya and other developing countries. Hopefully, the combined studies of this project will begin to do this by providing a basis for important generalizations. The task of this paper has been to sort out the conditions and identify the interests that together determine the manner in which research is being generated and applied in Kenya at present, in the belief that describing what is in one place can be a step toward an appreciation of what might be in many.

Whatever initiatives dominate the next phase of the development of educational research in Kenya, they will be governed by the political, economic, and administrative environment in which they are launched. Among the most important contextual factors are the deteriorating economic circumstances, the paramountcy of political issues in determining what is possible, the critical influence of the administrative and technical culture on the forms of research, the degree of commitment of the University to scholarship, the extent of popular comprehension of and participation in research activity, and the tolerance of the government for an inevitably critical activity. This review of the evolution of educational research in Kenya has hopefully helped to demonstrate that a further factor contributing to its effective development may be a continuing concern by scholars and donor agencies alike to identify the institutional attributes and social conditions that nourish the kinds of research that are desired.

Who Conducts Research in Kenya?

The concentration of research and development resources in a small number of countries is one of the major features of contemporary global inequality. This study does not concern itself with these global issues but instead takes the case of one developing country, Kenya, and some examples from one sector, education, and tries to examine the social, political, and economic factors that have influenced and continue to influence intellectual production.

First, the author examines the historical context of educational development in Kenya to locate the research enterprise within the political economy of the capitalist society that has evolved in Kenya since independence. This is done through an examination of the themes and concerns that have informed the "development debate" in general and the effect that investment in education, or rather, schooling, has had in this process.

Second, the contemporary research enterprise in Kenya is analyzed with the help of available empirical data to delineate which kinds of research have been conducted in the last few years, their sources of funds, authors, etc. and to raise some questions regarding the unequal resources available for research between foreign and local researchers and how this influences the research that is carried out. Questions are asked regarding Kenya's commitment to intellectual production and the relevance of much of what is produced vis-à-vis the prevailing socioeconomic situation. Some concluding remarks are made about the position of the University in Kenya, and implications for the research environment in Kenya are pointed out.

As societies struggle to subjugate nature to their control and production increases and becomes more complex, more and more human and financial resources are earmarked for research and experimental development (R&D). Countries with available, relevant statistics spent about U.S.$100 billion in R&D efforts in 1973 (Annerstedt 1979, p. 11). However, developing countries as a whole spent only about 3% of this sum; the rest was spent in industrialized countries, primarily in Europe and North America (Annerstedt 1979, p. 11). In fact, less than 11% of all R&D scientists and engineers were from developing countries in 1973, whereas six industrialized nations (U.S., USSR, Japan, West Germany, France, and the U.K.) employed more than 72% of the world's researchers and engineers and spent more than 83% of its R&D funds (Annerstedt 1979, p. 6). Within the Third World, African countries (with the exception of South Africa) spent about 10% of its R&D expenditures, calculated in U.S. dollars. South America spent about 25% whereas the rest of the R&D expenditures were consumed in Asia (Annerstedt 1979, p. 11).

The concentration of R&D resources in a small number of countries is one of the major features of contemporary global inequality, the origin of which is unequal development and production among countries of the world. This study does not concern itself with these global issues because many theoretical contributions have already been made in this area (Amin 1974; Chenery et al. 1974, Brandt 1980), and the debate continues in terms of forging a "new international

***John A. Nkinyangi** Institute of Development Studies, University of Nairobi, Nairobi, Kenya*

economic order." The issue of research in Kenya, and social science research in particular, is addressed. Education is seen as part of the social sciences, and research in this area as part of the general effort to understand social reality and the forces that shape it.

Background

Ascension to political independence in Kenya in 1963 disbanded some of the more blatant restrictions that inhibited the expansion of African education. More specifically, however, the postindependence educational expansion in Kenya was fueled by the growth of the economy and by a rational response by workers and peasants to exploit the benefits of Africanization. The growth of the educational system also coincided with the conventional wisdom of the time. This saw development, or rather modernization, as brought about by individual and, consequently, societal values and attitudes that could be infused through education.

The problem of development, or underdevelopment, was seen as the result of the inefficient use of resources: production was efficient if there were a maximization of output given certain factors of production; it was inefficient if less were produced by certain other combinations of these factors. Hence, the solution to the problems of economic growth lay in the process of optimizing the factors of production and infusing foreign investment capital while striving to improve the efficiency of the economic and social system. This diagnosis, and the prescription accompanying it, was largely ahistorical, let alone tautological, because it examined underdevelopment purely on the basis of factors internal to it.

In many developing countries like Kenya where the education of the majority had been blocked, modernization theories were readily accepted to the extent that schooling began to acquire undisputed value as a panacea for individual and societal development problems. The advent of these theories was accompanied by a proliferation of studies and general writings to support the world view that had taken root. Economists analyzed market economies in an effort to discover the "iron law" regarding the "stages of economic growth." Sociologists looked at the social organization of emerging societies and their recruitment patterns. Psychologists examined the psyches of such societies to locate the psychological attributes that promoted or hindered entrepreneurship, "need-achievement," individualism, etc.

In Kenya, where the full operationalization of the capitalist model of development had taken root during the 60s and early 70s (Senga and Migot-Adholla 1978, p. 124), social science research prospered in an environment in which the U.S., in particular, and Western governments and private interests, in general, were omnipresent (Senga and Migot-Adholla 1978, p. 124). At the Institute of Development Studies (IDS), an important social science research centre set up at the University College, Nairobi,[1] during the 60s, "a mixture of U.S. academic, commercial and security interests manifested themselves in the presence of large numbers of Americans 'trying to help' . . . [and as a result] the predominance of U.S. personnel in the IDS became a legitimate subject of some

[1]The University of Nairobi was constituted in 1970 after the break up of the University of East Africa, of which the University College, Nairobi, was part. Kenyatta University College is a Constituent College of the University of Nairobi.

serious suspicion and speculation by the end of that decade" (Senga and Migot-Adholla 1978, p. 127).

In keeping with the interests of the capitalist system during this period, social science research sought to document and analyze economic and political organizations, internal market structures, and issues related to social stability (population growth, urban migration, youth unemployment, etc.). Concern with economism often overlapped with a strong "Russophobia," a product of the cold war climate of the 60s and early 70s (see, for example, Attwood 1967).

Educational research was concentrated in a number of areas: labour development, economics of education, political and cultural socialization, attitudes, values and expectations of students, aptitude studies, historical accounts, nonformal education, and population studies. These studies were conducted by a host of scholars from different disciplines, the majority of whom were Westerners (Court 1971; Norgaard 1981). There is no doubt that these studies contributed a body of knowledge on Kenyan society and its educational system that was not available before in a systemized manner. However, the multidisciplinary, and sometimes even interdisciplinary, nature of these studies was vitiated by the fundamental weaknesses of the various disciplines "since each discipline, in its own way, brings to the totality, its own ahistoricism, its functionalism, and its implicit values disguised under the veil of its parts" (Amin et al. 1978, p. 35). This fundamental problem was further aggravated by the general orthodoxy and conservative tyranny of the ideas of the time. In his review of educational research up to 1971, David Court appropriately concluded that this body of knowledge was "relatively sparse in conclusion and fragmentary in approach . . . [and] for most part contributed little to the solution of Kenya's educational problems" (Court 1971, p. 1).

The irony of the situation, however, was that the more serious of the studies were themselves incontestable proof of the general failure of education to deliver all or most of what had been promised in its name. As seen from the societal as well as individual expectations attached to it, it seemed that rapid educational expansion had brought about a host of unanticipated problems: rising unit costs as well as budgetary rises for education over and above other services, "educated" unemployment, and the severe alienation that accompanied it as a result of failed expectations, serious student protests at different levels of the educational system, and so on. As Bowles (1972) stated, all evidence regarding social mobility and income distribution indicated that schooling's role was at best ambiguous and, more likely, a perpetuator of income and class differences.

The conclusion that can be drawn from this analysis is that by the end of the 60s and early 70s the dominant paradigm was under great stress, not the least of which came from the weight of contradictions created by its own dynamic. In summing up the failure of the decade, even the World Bank could concede that it had been a period of economic growth without development (Chenery et al. 1974).

The failures of the development expectations of the 60s gave way to an intense ideological debate both in the general public domain and in the intellectual circles during most of the 70s. The result was the birth of "new" development aspirations — equity, basic needs, popular anticipation, equality of opportunity, and integration of the traditional and the modern. These notions were closely intertwined, but the new philosophy of equity and basic needs helped to bring about a unifying factor in the ever-changing vocabulary of international

development experts (Rutjes 1979; Streeten 1979). But to test the seriousness of implied intentions is also to ask questions about the efficacy of the new concepts and additionally to raise other questions about the kind of social science the implied intentions and concepts gave rise to.

It seems that the success of the 70s, whether in theoretical formulation or in deriving direct policy interventions, was in substituting new concepts (and Shibboleths) for old. The evidence for this is in the failure of policymakers and their ideologues to deal seriously with what equity considerations entailed in terms of restructured social relations between and within nations.

In theoretical terms at least, the equity philosophy entailed efforts to try and meet the basic needs of the most disadvantaged social groups (e.g., the poor, women, pastoralists, etc.) or regions of a country (e.g., historically less-developed areas) in different sectors including education. The equity approach presented a more sympathetic look at the problems of development. However, the obvious puzzle presented by this latest reformulation was what incentive the ideologues of the basic needs approach thought different social forces (social classes, ethnic affiliations, regional blocks, etc.) — "the heart and soul of the alliance of domestic and foreign capital" (Leys 1975, p. 262) — might possibly have for ushering in reforms to make equity considerations a possibility.

Researchers in Kenya

As is well known, the period of the 60s and most of the 70s was an active one in the universities of the Western world fueled as it was by opposition to the American war in Indochina and disaffection with capitalism at home. The intellectual environment of the time spurred a myriad of studies, most of them with progressive orientation, in the Western countries and in the developing world.

In Kenya, this period saw the production of major books and monographs on the country's socioeconomic conditions (for example, Brett 1973; Leys 1975; van Zwanenberg 1975; Kaplinsky 1978; Kitching 1980; Swainson 1980). However, it is not to put down Africans or to cast aspersions on their intellectual acumen if one is forced to concede that most of this effort, most of this intellectual production, was undertaken by foreigners. Two University of Nairobi professors in the position to know attest to this: "Very few studies by local scholars have raised serious questions about the political or economic order. Instead, it is the expatriates who have sometimes raised some challenging criticism" (Senga and Migot-Adholla 1978, p. 127). As will be shown, the situation did not change in subsequent years.

Because the origins of researchers and sources of funding are critical factors that partly explain the kind of research that is carried out, some data from the period 1979–81 will be analyzed before studying the deeper structural factors, including who conducts research in Kenya, which underlie the whole political economy of intellectual production in Kenya. To my knowledge, these questions have not received systematic analysis before. In particular, the question of the unequal social division of labour between foreign and local scholars has never been subjected to empirical analysis.

Research, however, is not an activity anyone can choose to engage in at will and, by Kenyan law, "research clearance" must be obtained from appropriate authorities in the Office of the President. Before that, however, the

proposed research has to be examined by several gatekeepers: the Office of the President first scrutinizes it, and, if necessary, vetoes it, or passes it on to the National Council for Science and Technology, which reviews it further, and, again if necessary, calls for professional comments before recommending it to the Office of the President for clearance. All this is done with the express intention of discovering and eliminating research efforts that may not be in the "national interest" and to bring research activity more in line with national development priorities.

The data that are presented in this section are on projects that were "cleared" by the Office of the President. Data for projects that were turned down are not available, although this would have presented a good comparative framework in terms of what was considered as being in the national interest in the research arena.

Table 1 shows the number of scholars who were permitted to conduct research in Kenya by country of origin and by research orientation for the period 1979–81. A total of 470 scholars conducted research in the country during the period. However, this figure somewhat underestimates the number of people who may have been conducting research, because it does not include government research and data-gathering activities or the research work conducted in private and public laboratories and, therefore, not requiring research clearance. Nevertheless, such a number of researchers, and spread over 35 countries, excluding Kenya, shows that the country is a popular haven for research activity.

Many of the people who conducted research or came to conduct research in Kenya during the period were, in one way or another, connected with universities or similar institutions engaging in research. Many of them were academic members of staff or research personnel at such institutions or postgraduate students conducting research for their MA or Doctoral theses. The relatively high numbers of Ugandans carrying out research in Kenya compared to those from other African countries was due to the displacement of Ugandan academics that occurred during the reign of Idi Amin (see Namuddu, this volume).

Otherwise, why Kenya was so popular with researchers from so many different countries is difficult to determine, although a good climate, beautiful game parks and beaches, political stability, and related considerations cannot be overruled. (Images of Kenya's famed political stability were shattered by the attempted coup d'état of 1 August 1982 that ended quickly but with much loss of life and property.) However, a closer examination shows that the majority of researchers came from a relatively small number of countries. More than three-quarters of the researchers (76.9%) came from five countries, including Kenya. Four of these were developed countries: U.S., the U.K., West Germany, and Japan, in that order. After Kenya (31.1%), North America (22.8%), U.K. (18.5%), and the rest of Europe (15.3%), the other groups of countries, including Africa, were hardly represented. Note, however, that there were as many Japanese researchers coming to Kenya as there were African researchers from other countries than Kenya.

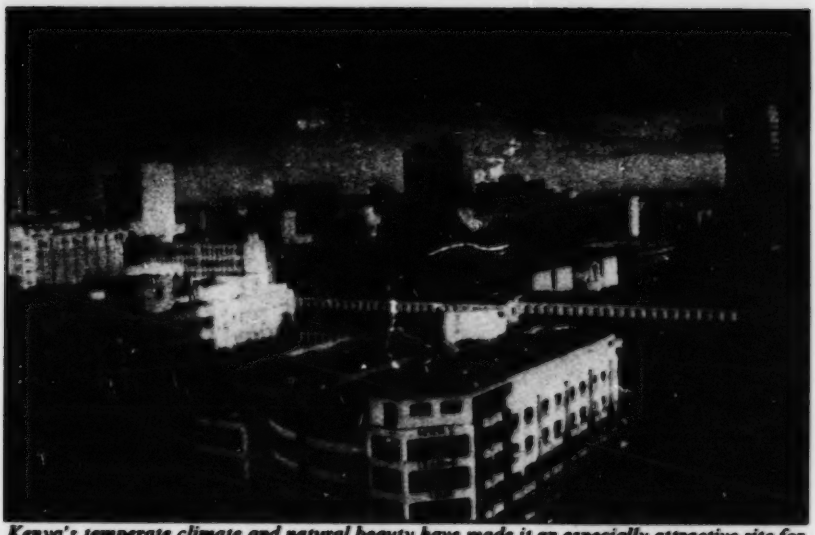
When the data is collapsed and aggregated regionally, researchers from Africa (including those from Kenya) were in the minority (36.6%) and the majority of researchers (62.3%) came from developed countries. This means that close to two-thirds of all approved researchers in 1979–81 came from regions other than Africa. Another way of looking at this is that the majority of

Table 1. Scholars permitted to conduct research in Kenya listed by country of origin and research orientation, 1979–81.

Country	Research orientation																Total researchers	Percentage
	Economics	Education	Zoology	Prehistory	Sociology	Anthropology	Geology	Rural development	History	Medicine	Urban development	Humanities	Ecology	Political economy	Agriculture	Other		
Kenya	24	32	—	—	17	5	6	8	7	4	9	11	3	7	6	7	146	31.1
USA	8	2	26	16	8	4	3	4	6	7	2	2	5	1	—	1	95	20.2
UK	6	2	13	13	—	6	10	8	4	7	4	2	4	3	3	2	87	18.5
West Germany	3	1	4	1	1	5	6	—	1	—	2	—	1	—	—	1	26	5.5
Japan	1	—	—	2	1	11	2	—	—	—	—	2	1	—	1	—	21	4.5
Uganda	4	2	—	—	1	1	—	1	1	1	—	—	—	1	1	—	13	2.8
Canada	3	2	—	1	—	—	1	—	2	1	—	—	1	1	—	—	12	2.6
The Netherlands	1	—	—	1	1	—	1	2	—	1	1	—	1	1	1	1	12	2.6
Switzerland	1	—	2	—	1	—	2	1	—	—	—	—	—	—	1	—	7	1.5
France	1	—	—	3	—	2	—	—	—	—	—	—	—	—	—	—	6	1.3
Sweden	1	—	—	—	1	—	—	—	—	—	—	1	1	1	—	—	5	1.1
Denmark	—	1	—	—	—	—	—	1	—	—	1	—	—	1	—	—	4	0.9
Australia	—	—	—	—	2	—	—	—	1	—	—	—	—	—	1	—	4	0.9
Italy	—	—	—	—	—	1	2	—	—	—	—	—	—	—	—	—	3	0.6
Norway	—	—	—	—	—	—	—	3	—	—	—	—	—	—	—	—	3	0.6
Finland	—	—	—	—	1	—	—	—	—	—	—	—	1	—	—	—	2	0.4
Austria	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	—	2	0.4

India	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	2	0.4
Zimbabwe	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	2	0.4
Rwanda	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	2	0.4
Ethiopia	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	0.2
Papua New Guinea	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	0.2
Zaire	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	0.2
Tanzania	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	0.2
Belgium	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	0.2
Nigeria	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	0.2
Israel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	0.2
New Zealand	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1	0.2
Turkey	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1	0.2
Lesotho	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	0.2
Yugoslavia	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	0.2
Ghana	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1	0.2
Mexico	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1	0.2
Swaziland	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	0.2
Zambia	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	0.2
Malawi	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1	0.2
Total	57	45	45	40	37	36	34	28	24	22	19	19	18	17	14	15	470	100.0
Percentage	12.1	9.6	9.6	8.5	7.9	7.7	7.2	6.0	5.1	4.7	4.0	4.0	3.8	3.6	3.0	3.2	100.0	—

*Note: Figures may not add up to 100% because of rounding. The humanities include literature, language, and art and design.
Source: National Council for Science and Technology, Nairobi, Kenya.



Kenya's temperate climate and natural beauty have made it an especially attractive site for foreign researchers. The debate is whether such researchers have helped or harmed the development of local research capacity.

scientists interpreting Kenyan social reality were foreigners (i.e., non-Kenyan and non-African).

Table 1 shows the country of origin of researchers and the disciplinary orientation of their research. Caution should be exercised in the interpretation of this information because the disciplinary clusterings of the research projects was arrived at by the title of the research, and, therefore, gives only a partial view of what a project was about and does not by any means help in arriving at a judgment on the full worth of a research project.

Table 1 does show, however, very interesting trends in the kind of research conducted by researchers from particular countries. This information may help to determine why foreign researchers come to Kenya. The most popular concentrations (5% and upward of total) are history, rural development, geology, anthropology, sociology, prehistory, zoology, education, and economics, in ascending order. The least popular are medicine; urban development; the humanities, i.e., literature, language, and art and design; ecology; political economy; and agriculture, in descending order of popularity. One can draw one's own conclusions regarding how this tallies with the officially stated priorities for development.

Table 2, however, gives more clarification of these data by looking at the distribution of research orientation by the region of origin of the researchers. The category "the West," includes countries of Western Europe, North America, Japan, Australia, New Zealand, Turkey, and Israel that, in one way or another, form the "Western alliance." This is probably a good description because it summarizes their hegemonic cohesiveness in economic, political, cultural, and military-strategic terms. This of course does not imply that researchers' interests coincide with those of the countries of their origin but rather that, in general,

Table 2. Distribution of scholars by research orientation and region of origin, 1979–81.

Research orientation	Kenya		The "West"		Others	
	No.	%	No.	%	No.	%
Economics	24	42.1	26	45.6	7	12.3
Education	32	71.1	9	20.0	4	8.9
Zoology	0	0.0	37	94.9	2	5.1
Prehistory	0	0.0	39	97.5	1	2.5
Sociology	17	45.9	17	45.9	3	8.2
Anthropology	5	13.9	29	80.6	2	5.5
Geology	6	17.1	29	82.9	0	0.0
Rural development	8	28.6	19	67.9	1	3.5
History	7	28.0	16	64.0	2	8.0
Medicine	4	10.3	34	87.2	1	2.5
Urban development	9	47.4	10	52.6	0	0.0
Humanities[a]	11	57.9	7	36.8	1	5.3
Ecology	3	16.7	15	83.3	0	0.0
Political economy	7	43.8	9	56.2	0	0.0
Agriculture	6	40.0	8	53.3	1	6.7
Other	7	53.8	5	38.5	1	7.7
Total	146	31.1	265	56.5	58	12.4

[a]Includes creative art, literature, language, and art and design.
Source: Summarized from Table 1.

people's interests are influenced by their roots, not to mention their ideological and other idiosyncrasies. The category "others," refers to Papua New Guinea, Yugoslavia, and Mexico. For research orientations, it refers to a number of disparate studies — from some in chemistry, geography, and so on, to some others in law.

The information contained in Table 2 is alarming. Other than in education and humanities, and the relatively insignificant disparate classification, "others," in which Kenyan researchers were 71.1%, 57.9%, and 53.8% of those categories, respectively, in no research clustering were Kenyan researchers in the majority. Whereas in some areas there were as many Kenyans as there were foreigners, as in urban development, economics, and sociological studies, in some others, like anthropology, geology, rural development, history, and ecology, they were markedly in the minority. In zoology and prehistory, constituting 18.1% of the total number of projects approved, or the next most popular areas of interest after economics and education, there were no indigenous Kenyan researchers at all.

The most popular areas of interest with foreign researchers, mainly Westerners, were political economy, agriculture, history, rural development, anthropology, geology, and of course, prehistory and zoology, in ascending order. Analysis by single Western countries or clusters of Western countries is interesting in terms of what it reveals. In zoology, 57.8% and 28.9% of all researchers were from the U.S. and the U.K., respectively. In prehistory, their numbers were 40.0% and 32.5% of their countries' totals, respectively. In fact, 21.4% and 15.9% of all American and British scholars carried out zoological and prehistoric studies, respectively. Does this underscore Americans' interests in animals or what has been derisively described as the British preoccupation with digging up the skulls of dead Africans (Ngugi wa Thiong'o 1981, p. 31)?

Fifty percent of all anthropological studies were carried out by Europeans and Americans, whereas 30.6% were by the Japanese. In fact, 52.4% of all the Japanese who conducted research during the period carried out anthropological investigations. This is surprising in view of the choice of the geographical areas

where the studies were carried out and Japan's newfound social science research interest in this part of the world. Is this perhaps related to gaining a better understanding of future marketing strategies? Japanese interests are even more startling in that their choice of anthropological investigations are very systematic because they all seem to be among peoples of related linguistic or ecological groups, the Turkana, the Pokot, the Kalenjin, the Gabra, etc.

In geological studies, about one-third of the scholars were from Britain; 85.7% from Western countries. (The smell of oil?) In medicine and related areas, 63.6% of the researchers were from America or Britain. The same was true for rural development and historical studies: 42.9% and 40.0%, of all researchers in these clusters, respectively.

The general conclusion that can be drawn from the empirical evidence is that in most areas of research concern, whether it be in rural development, history, or medicine, the Kenyan reality is being interpreted by American and British scholars, in particular, or by developed country scholars, in general.

Financial Resources for Research

Table 3 examines the amount of reported funds that researchers from different countries had to conduct research during 1979–81. Caution should be exercised in interpreting all the funding data. It is known, for example, that many foreign researchers obtain grants from several sources, but report only one grant. This kind of bias, however, only tends to underestimate the true allocations for foreign researchers that are phenomenal under any circumstances.

Table 3 shows the number of projects for which funding information was available (79.6% of all projects) by country and the dispersion of grants among projects. About U.S.$5.5 million in grants was allocated to 374 projects, or about U.S.$14 600 per project. There was much differentiation in allocations to research projects, however. For example, U.S.$92 was allocated to a Kenyan to carry out some thesis research for an MA in education, U.S.$91 000 was allocated to an American to study the biochronology of African prehistoric monkeys, and U.S.$1.27 million was granted to a British anthropology professor to study the ecology of subsistence pastoralism among the Turkana.

The data in Table 3 also show a great deal of inequality in the size of grants researchers from different countries had for their work. The researchers with the largest grants, on the average, were Australians (U.S.$179 435), the British (U.S.$35 511), and the Canadians (U.S.$30 806). Among the researchers with the least money were Kenyans (at the bottom with U.S.$2048), the French (U.S.$2674), and the Ugandans (U.S.$3602).

Another way of looking at the disparities in research grant allocations is that 112 Kenyans (or 29.9% of all researchers who conducted research in Kenya in 1979–81) had among them as much money as 22 West Germans (5.9% of all researchers) or 9 Canadians (2.4% of all researchers) or of less than 2 Australians (0.5% of all researchers). Eighty-six Americans, or 23.0% of all researchers, had six times more money than 112 Kenyans (29.9% of all researchers), whereas 65 Britons, 17.4% of all researchers, had more than 10 times the money Kenyans had.

If it is taken that large grants mean allocations (within the country categories) of above the overall grant mean allocation of U.S.$14 607, then researchers from the U.S., U.K., West Germany, Canada, and Australia,

Table 1. Research expenditures by researchers' country of origin, 1976–78.

Country	No. of projects	Expenditure (U.S.$) Total	Mean	Range	Projects with largest share of expenditure No.	%
Kenya	113	220412	2045	65–13825	27	72
USA	86	1191886	16156	393–[illegible]	17	70
U.K.	65	2981196	39911	372–[illegible]	5	78
West Germany	22	338548	16864	258–[illegible]	5	77
Japan	16	123691	7980	1065–[illegible]	9	58
Uganda	11	39833	3682	470–[illegible]	4	61
Canada	9	277254	30806	2500–[illegible]	1	78
The Netherlands	9	68766	7641	365–[illegible]	2	51
France	6	34983	3498	885–[illegible]	2	58
Switzerland	5	83695	17139	8896–[illegible]	2	67
Sweden	4	36440	9110	3925–[illegible]	1	61
Denmark	3	51414	17138	3188–[illegible]	1	62
Norway	3	117301	39138	—	—	—
Austria	2	3918	2959	563–[illegible]	1	91
Zimbabwe	2	36864	12957	3864–[illegible]	1	59
Australia	2	300000	179438	4325–[illegible]	1	59
Italy	2	13000	6500	2000–[illegible]	1	85
Finland	1	11000	—	—	—	—
India	1	8007	—	—	—	—
Rwanda	1	2000	—	—	—	—
Ethiopia	1	652	—	—	—	—
Papua New Guinea	1	1522	—	—	—	—
Tanzania	1	783	—	—	—	—
Belgium	1	13000	—	—	—	—
Nigeria	1	260	—	—	—	—
New Zealand	1	6384	—	—	—	—
Turkey	1	20000	—	—	—	—
Lesotho	1	652	—	—	—	—
Ghana	1	4336	—	—	—	—
Mexico	1	3000	—	—	—	—
Swaziland	1	652	—	—	—	—
Malawi	1	7200	—	—	—	—
Total	394	5803975	14607	93–[illegible]		

Source: National Council for Science and Technology, Nairobi, Kenya.

accounting for less than half of all researchers, had more than 84% of all the research grants. Within each country there was also much inequality in the size of research grants with only a small number of projects obtaining the largest share of all grants.

When the large projects above the total average of U.S.$14 607 are examined, then the inequalities in research grants among scholars within and between countries become even more apparent (Table 4). It should be noted that, as a rule, the majority of Kenyans (i.e., those supported by the University of Nairobi), usually students, had about Kenya Shillings 6 000 (or U.S.$652) for their research projects whereas a small group of their more fortunate countrymen, supported by U.S. foundations, study in the U.S., and will return to conduct research and receive grants 10 times higher than this.

An examination of country data shows that the inequalities between and within research concentrations are just as evident. In each country and in each field, only a small number of projects get the largest share of all research

Table 4. [illegible]

Country	No. of projects: Total	No. of projects: Large	Large projects as a percentage of the country's total projects	Large projects as a percentage of all large projects
Kenya	183	1	0.5	1.5
USA	80	33	41.3	48.4
U.K.	49	15	30.6	22.0
[illegible]	22	3	13.7	4.4
[illegible]	5	1	20.0	1.5
[illegible]	9	2	22.2	3.0
[illegible]	1	1	100.0	1.5
[illegible]	9	2	22.2	3.0
[illegible]	4	1	25.0	1.5
[illegible]	3	1	33.3	1.5
[illegible]	2	1	50.0	1.5
[illegible]	2	1	50.0	1.5
[illegible]	1	1	100.0	1.5
[illegible]	1	1	100.0	1.5
Others (10)	20	—	—	—
Total	391	67	17.1	—

Source: National Council for Science and Technology, Nairobi, Kenya.

grants (i.e., grants above the total average). This disaggregation also shows the inequalities in available funds between and among researchers from different countries, between and among subject areas, and altogether. Among countries, Kenyans have the smallest grants. This is also true even when research concentrations are taken into consideration.

In terms of the researchers from the five developed countries who had the biggest grants in absolute as well as relative terms, among the Americans, 46.5% of all grants were given for zoological and prehistorical studies. About 20% of all Americans got roughly 70% of all American grants. From Britain, seven researchers in anthropology and medicine (or 10.8% of all British researchers) got 76.7% of all British grants. Five British projects got about 78% of that country's money. One anthropological project alone got about 55% of all British grants. From West Germany, six researchers, or about one-quarter of all German researchers, got 76.6% of all the grants to undertake studies in economics, prehistory, and anthropology. Between the two Australians who conducted research in Kenya, one got U.S.$354 348 for an agricultural project, whereas the other got U.S.$4522 for a sociological project.

In terms of grant allocations by research orientation (Table 5), although 12.3% of all studies were in economics, and 9.9% were in education, researchers in these areas received only 3.6% and 1.9% of the grants, respectively. On the other hand, although people conducting prehistorical, anthropological, and medical studies were only 9.6%, 7.8%, and 4.0% of the total number of researchers, respectively, they received 13.0%, 26.8%, and 11.8% of all grants, respectively. It was noted earlier that a number of single projects in these subject areas had phenomenal allocations. Overall, the concentrations that received the most grants were zoology (9.3%), medicine (11.8%), prehistory (13.0%), and anthropology (26.8%).

Table 6 takes the special case of education and explores the differences in research grant allocations among countries. As indicated earlier, although researchers conducting studies in education came second in absolute numbers after those in economics, nevertheless, they received only a miniscule share of the total grants allocated during the period. The point of this table, however,

Table 5. Research grant allocations by research orientation, 1979–81.

Orientation	Researchers No.	Researchers %	Share of research grants (%)
Economics	46	12.3	3.6
Education	37	9.9	1.9
Zoology	39	10.4	9.3
Prehistory	36	9.6	13.0
Sociology	26	7.0	3.7
Anthropology	28	7.5	26.8
Geology	28	7.5	4.6
Rural development	24	6.4	7.8
History	15	4.0	1.5
Medicine	15	4.0	11.8
Urban development	11	2.9	0.7
Humanities*	13	3.5	0.6
Ecology	16	4.3	3.3
Political economy	16	4.8	0.3
Agriculture	7	2.4	7.5
Other	12	3.2	0.6
Total	374	100.0	100.0

*Includes literature, language, and art and design.
Note: Percentages may not total 100% because of rounding.
Source: National Council for Science and Technology, Nairobi, Kenya.

is to show that although Kenyans made up 70% of all researchers who conducted research in education, they received only about 38% of all funds allocated in this area. The inequality in grant allocations, within and among countries, is clear judging from the small number of projects taking up the largest shares of available grants.

An examination of research grants made by the National Council for Science and Technology and the University of Nairobi and Kenyatta University College in the last few years are other useful indicators of commitment to research by the leading local research institutions, especially when looked at in the light of the tables that compare allocations for researchers from different countries.

Table 6. Research expenditures in education by researchers' country of origin, 1979–81.

Country	No. of projects	Total expenditures	Share (%)	Range	Projects with largest share of expenditures No.	%
Kenya	5	[illegible]	[illegible]	[illegible]	5	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]	1	[illegible]
U.S.	2	[illegible]	[illegible]	[illegible]	2	[illegible]
Canada	1	[illegible]	[illegible]	[illegible]	1	[illegible]
[illegible]	—	—	—	—	—	—
[illegible]	—	—	—	—	—	—
[illegible]	—	—	—	—	—	—
[illegible]	—	—	—	—	—	—
[illegible]	—	—	—	—	—	—
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

During the period under review, the National Council for Science and Technology, a body created a few years ago with the express purpose of encouraging and supporting research by local researchers, allocated only U.S.$571 246 to 48 researchers. One-fifth as many Canadians or two Australians had half as much money for their work during the same period. The University of Nairobi Deans' Committee allocated only U.S.$242 140 to 172 researchers. One-tenth as many West Germans and one-twentieth as many Canadians and three Norwegians had more or about the same support for their projects. The Kenyatta University College Deans' Committee, on the other hand, allocated only U.S.$115 702 to some 112 University researchers, or less money than about one-fifth as many West Germans, 15% as many Japanese, and 8% as many Canadians had to spend on their projects.

In general, all the data in the preceding section indicate several problems in the research enterprise in Kenya. On the one hand, during the period 1979–81, active Kenyan researchers were clearly a minority in their own country. In most if not in nearly all important areas of scientific inquiry there were more foreigners than there were Kenyans. The implication is that the Kenyan reality, whatever that might be, is being interpreted (for Kenyans) by foreigners.

On the other hand, the data show beyond any doubt the serious inequalities that exist in the allocations of research grants between and among individuals from different countries and between and among individuals conducting research in different areas. Although it is difficult to say how much money can be considered adequate for a research project, clearly some grant allocations were too small, whereas others were too large. Whether grant allocations awarded to locals are compared to those awarded to foreigners, or whether allocations to areas of inquiry across countries are analyzed, Kenyan researchers had far too little money compared to their counterparts from other countries. The money question is important because ultimately it must affect the scope as well as the quality of a study.

But why do Kenyans engaged in research activity appear to be a minority in their own country? Why do they seem to have access to so little money for research compared to their counterparts from other countries? How do these two issues and others related to them coalesce to explain the research environment in Kenya?

Understanding the Research Environment in Kenya

Training Myth

The notions common among certain donor agencies that Kenyans do not have the necessary skills to conduct research or that their institutions do not have the necessary capacity to train adequate numbers of such people are myths and, at best, falsehoods propagated by people whose true intentions are to make the never-ending training of Africans their lifetime career. There are many Kenyans with education and training up to the PhD level and who are working, for example, at the University of Nairobi and at Kenyatta University College and who are supposed to engage in research as part of their regular work. Is it assumed that they went through graduate school without acquiring the necessary research skills? What about the "training exercise" of which Africans are supposed to have been the beneficiaries in one way or another since the 60s? Is it assumed that in more than 20 years Kenya has not generated enough people with basic research competencies?

Although such notions can readily be shown to be simplistic in explaining the prevailing situation, their impact is often serious because of the policy implications that arise from them in terms of prescriptions of more training for Africans. The challenge is not in retooling the academic and/or the potential researchers that there are at the University or at various departments of government involved in or concerned with the conduct of research, but, rather, in training a future generation of researchers at the University — the institution chartered for that very purpose — and in making it objectively possible for those charged with intellectual production to engage in this activity. There are serious difficulties in both regards.

Support for postgraduate training, whether locally or overseas, is one way of creating new research skills and talents. The government, the University itself, and a number of foreign countries/donor agencies are involved in this process. Analysis of the inputs of all countries/organizations involved, however, indicates a number of contradictions in the importance attached to the conduct of research or to the acquisition of research skills.

In all countries, postgraduate-level education is supposed to provide students with intensive and rigorous training to acquire theoretical and empirical skills. In fact, the unity between theory and analysis backed by empirical data is always emphasized at this level. Whenever possible, theoretical and empirical training are joined and the success of the process is judged by the prospective graduates' ability to conduct an independent research project of their own on a subject of important academic or societal concern or both.

One way of judging the importance attached to research in general, and the acquisition of research skills in particular, is by examining research grant allocations of agencies that supported postgraduate education in terms of their support for the research projects of their sponsored students. It quickly becomes clear that priority attached to both of these aspects is very low.

As indicated earlier, foreign researchers, and not Kenyans, received the largest grants to conduct research in Kenya in 1979–81. The majority of researchers, including both foreigners and Kenyans, were in fact postgraduate students (at the MA or PhD level). However, although the output was comparable at least in theoretical terms, Kenyan postgraduate students, in general, obtained comparatively small research grants.

An examination of the major donor agencies that supported postgraduate training against their support for postgraduate research during the same period merely confirms what has already been stated in different words. Taken singularly or collectively, the agencies of the Kenyan government, the University of Nairobi and Kenyatta University College, and DAAD (West Germany), all of which participated in this training exercise, allocated extremely small grants for the research activities of their sponsored postgraduate students. On the average, this figure was about Kenya shillings 6000, or about U.S.$652. A comparison between this average allocation and what visiting postgraduate students have available to them presents a very discouraging picture. This is also an indication of the state of postgraduate education in Kenya, linked as it is supposed to be with the acquisition of research competence.

Now, instead of granting more money for the support of postgraduate training programs to increase available research capabilities and improve institutional research capacity, many agencies are beginning to favour short-term, 1–2 week training programs to produce or retool people with the necessary and appropriate research skills. (This approach was questioned by African

participants at a meeting of donor agency representatives, the Bellagio Group, held in 1981, but the action in regard to training seemed to have been already decided.) The only real gain in this approach is the public good-will and favourable propaganda that it generates for the agency that has organized it. It costs very little, is highly visible, and at the same time it allows the foreign experts directing the exercise to take care of their interests in other parts of the world.

If it is considered that competence in the conduct of research involves more than just an ability to manipulate statistics but also requires a coherent theoretical framework, then this kind of training quickly becomes unmasked for what it really is — a useless kind of training that does not sufficiently equip trainees with analytical tools to interpret their social reality. Of course, donor countries/agencies could give a different kind of support to research training. They could assist in the recruitment of competent visiting research professors for periods of 1 or 2 years, for example. This, plus sufficient research grants for the persons to be trained by such professors, would supplement the local efforts.

What about the role of the government and the University in providing adequate numbers of Kenyans with competence for the conduct of research? Admittedly most governments as well as universities in developing countries pay little attention to research. In Kenya, for example, there is no doubt about the importance of research, at least as emphasized in official pronouncements and echoed in official documents like the Five Year National Development Plan. The practice, however, is quite contradictory. When funds are available, it seems that the policy of the University administration is to spread them around the faculty as much as possible. Consequently, this makes most Deans' Committee research grants very small, on the average U.S.$1408 to faculty at the University of Nairobi and U.S.$1033 to faculty at Kenyatta University College. It is doubtful if any serious research could be conducted on these kinds of limited budgets. At the time the government mentioned in its Five Year Development Plan report "increasing research talent through advanced degree programmes at the University of Nairobi and abroad" and adopting the policy of allocating 1% of the gross domestic product (GDP) for research purposes in the long run, it also substantially cut grant allocations to the University, thus jeopardizing the training and research activities of the University. Cuts in budgetary allocations to the University were about 13% in 1981. During 1982, some faculties and departments claimed that their allocations had been reduced by half. The position of the University both materially and otherwise got progressively worse from the second half of 1982 following the foiled coup d'état in August of that year.

As for the University itself, when faced with budgetary problems, research grants, whether allocated or not, are the first casualties during the reordering of priorities. Since 1981, for example, the Finance Officer has frozen Deans' Committee research grants to members of staff. This has almost completely halted research production by members of the academic staff. At the IDS, the University's main centre for the conduct of social science research and previously one of the leading social science research centres in Africa, serious research production by individual scholars or by the institution has nearly come to a standstill giving way instead to consultancies and short-term contract research.

Naturally, in the face of fiscal problems, priorities have to be reordered.

However, the government cannot continue to make perorations about the importance of research and then respond with totally contradictory measures. The same applies to the University. By reordering its priorities, the University could have some readily available funds to supplement its meagre research coffers. For example, by eliminating the neocolonial institution of external examiners, the University of Nairobi could have another U.S.$110 027, or more, available for research. In any case, that was the amount of money allocated in 1978–79 for airfares, hotel bills, allowances, etc. to enable some 100 external examiners to visit the University for about 5 days. The external examiners are a group of academics, usually foreigners, who visit the University of Nairobi and Kenyatta University College for a few days each year to moderate the University's examinations and to ensure that "international standards of excellence" are kept. In 1979–81, nearly a quarter of all external examiners were from the U.K.

The money spent by the University on external examiners in 1978–79, although not large in absolute terms, was substantial if looked at in other ways. It was half as much as 112 Kenyan researchers were allocated for their projects in 1979–81 (see Table 3), nearly half as much as the University of Nairobi Deans' Committee voted for some 172 faculty projects in 1979–80, and nearly as much as the Kenyatta University College Deans' Committee voted for some 112 faculty projects in 1975–80. The money was by far much more than all the grants allocated to researchers in education in 1979–81 (see Table 6).

Apart from this method of squandering scarce resources, many Kenyan academics are very unhappy over this form of institutionalized neocolonialism. The forthright comments of one lecturer reflect this feeling and at the same time throw some light on some sociopsychological factors that influence the general mood at African universities (Atwoki 1980):

> How stupid must African academia be, to believe that there is a set of 'international standards' in pursuit of which we hope to attain academic excellence! Yet every year large sums of money are spent chasing this wild goose. The majority of African Universities have to appoint 'External Examiners' to moderate undergraduate examinations and confirm the marks awarded by internal examiners. This normally ends up frustrating the integrity of the academic staff. If one is adequately qualified in his discipline to be appointed lecturer or professor, it is difficult to imagine why he cannot judge which of his students should get distinction, and who should fail in that particular discipline.

However, regardless of how important research activity might be made to seem by way of funds and other resources voted to it, ultimately the value society attaches to this activity is only indicated by the amount of research findings that affects policy formulation and improvement of the quality of life or of things in general. Recent Kenya history, however, is littered with many examples of key decisions that were taken without the benefit of research or despite contrary recommendations from actual research findings. Among the indications from the educational sector are the abolition of the "old" mathematics and the introduction of "new" mathematics, followed by the abolition of the new mathematics and the reintroduction of the old; teaching English by radio; abolition of primary school fees; introduction of boarding schools for pastoralists; introduction of 9-year primary education; the decision not to have "election symbols" in the 1984 General Elections, because all Kenyans will have or should have attained literacy by that time; and frequent changes in official

thinking over who is to be included in the proposed National Student Service Scheme. (First it was announced it would be all university students, then all Form Six school leavers; finally it was decided that it would be second year university students. The implementation of the scheme, however, has been postponed.)

The foregoing sets the scene for the discussion of the research environment at the University. It cannot be emphasized enough that intellectual activity, i.e., the whole generation of new ideas and skills, is the product of a composite number of factors, including monetary and other resources, that are available to a university. In other words, a university is only a mirror of the society in which it is set. The generation of ideas and skills takes place in a certain intellectual environment that is itself the product of factors that are both endogenous and exogenous to the university. Moreover, it also depends on the role ascribed to the university in each society.

Social Estrangement of the University

The contemporary social estrangement of the University in Kenya is described by one professor who laments the passing of an earlier golden era (Ochieng 1978):

> There was a time immediately after independence when any Kenyan politician worth his salt was never happy until he had been given an opportunity to address university audiences. In the mid-sixties major policy statements were addressed to the gathered academicians and red-gowned students at the University's Taifa Hall. I can still remember the endless debates which Kenyan leaders like Tom Mboya, Gikonyo Kiano and Ronald Ngala held with us. Those were the days when our celebrated scholars like Okot p'Bitek, Allan Ogot and Ali Mazrui would write incessantly on African culture, literature and political thought. The pages of the now defunct *East African Journal* would be littered with insightful and positive dialogue between our academicians and our Members of Parliament on our social, economic and political aspirations. What went wrong? Did our academicians lose interest in the political issues of the state? Or have they been scared into silence? Or can we assume that our current academicians are incapable of reflecting on fundamental political issues that affect us . . . . We could ask the same thing of our political leaders. How come that today none of them is interested in broad reflection on our political philosophy?

The slow but sure estrangement of the University that seems to be taking place in Kenya has developed over time. It is the result of many factors that are a product of the kind of society that is evolving in Kenya. The discussion of all these various factors is beyond the scope of this study, but work on these factors is being conducted as part of other ongoing efforts (Nkinyangi 1981). In this study, the main lines that may help to explain this alienation of the University will be outlined to shed some light on the intellectual production of which research activity is a part.

In Kenya, as in other developing countries, discussion on the role of the University centres on what the University *can* do, or *should* do, to contribute to the process of development. Its role in creating a pool of skilled labour in all fields has probably been described most often, however. Along with this, of course, is its supposed function to develop and promote knowledge through teaching and research. Not always articulated as explicitly, but, in the opinion of many, also an important function of the University is that it should analyze,

interpret, and explain the prerequisite conditions that enable a society to rise to a higher quality of life for all its members (Yesufu 1973). An examination of all those lofty ideals is a good way of looking at how the University is fulfilling its obligation to society.

To begin with, what is the University's success in the training of skilled labour and in processing knowledge in general? Between 1970, when the University of Nairobi was constituted as an independent entity away from the then University of East Africa, and 1980, 13 820 graduates were processed through the institution. A breakdown of the number of graduates for the period 1971–79 by areas of specialization offers some insights into the University's supposed contribution to the development of highly skilled labour.

Some policy questions arise immediately after even a cursory examination of this data. Such a small number of graduates compared to the total population (less than 0.07% of the entire Kenyan population of about 16 million) points to the elitist nature of university education in Kenya. Huge societal outlays for such a small number of people brings even more social pressure that the institution should meet certain societal obligations. Nevertheless, despite the University's existence for more than 10 years and its participation in the creation of skilled labour, there is still a severe shortage of skilled labour in all basic categories, such as statisticians, doctors, engineers, technicians, and secretaries.

As for the University as employer, it has hardly succeeded in training enough skilled labour of its own. Up to 1979, only a minority of the faculties were more than 50% Kenyanized (Court 1980). The situation didn't seem to change much in 1980. The explanation for this does not lie entirely with the University as a training institution, however, but in an understanding of the general societal forces prevailing in Kenya at this time, and in how they affect the University as an institution, and the training capacity of the people who work there as individuals or members of a certain social class.

First, there is a high turnover at the University as a result of job dissatisfaction caused by, among other things, low salaries (at least as compared to equivalent positions in the private sector) and by limited upward mobility. Second, there is the general feeling that rewards (in the way of promotions, for example) are not commensurate with production. Professors, for example, are paid almost double what lecturers are paid, which implies double productivity, but this is often not the case. Shortages of staff mean that faculty members spend an inordinate amount of time teaching and, therefore, cannot conduct research. But faculty members who do not produce research or do not publish have a slim chance for promotion. Moreover, there is also the problem of the general scarcity of funds to conduct research.

All of these problems are compounded by the lack of an effective way to deal with or to express grievances, because the government has become progressively intolerant of dissent at the University and in the country in general. In 1981, for example, the government banned the Staff Union, the body that represented staff viewpoints. Since the first quarter of 1982, the government has jailed or detained without trial a number of students, university lecturers, and politicians. The University was closed indefinitely following the August 1982 coup d'état attempt, which students supported openly in the streets of Nairobi.

The general environment that these problems create at the University is one of intellectual flux, a situation not conducive to the fulfillment of the

institution's declared mandate. Moreover, the proletarianization process that is taking place among the members of the University, as well as among the Kenyan middle class in general (N'ska et al. 1981), is making academics spend more time in other activities than in meaningful intellectual production. As indicated, many academics have turned to consultancy work or to running small businesses. Although consultancy work is an intellectual activity, it is doubtful whether the production is very useful, conducted as it is under pressure of time and other commitments and usually only for the purpose of generating income. Moreover, the product of this kind of intellectual production is not very useful for Kenyan society because it remains the property of its sponsors, usually foreign donor agencies, and is not added to the stock of readily available knowledge.

The failure of the University to create the necessary adequate skilled labour for positions in the private and public sectors has led to a dependence on foreign experts in all sectors of the Kenyan society from primary and secondary school curriculum developers and school inspectors to management advisers in industry and government to lecturers and professors in different departments of the University.

The predominance of a kind of "labour aristocracy" in the form of a small group of people called "experts" causes bitterness among the Kenyan intelligentsia in general and among the intellectual stratum of this group in particular. It also contributes to poor working relations. Whether the so-called experts are working at the University, in government or elsewhere, they are a highly visible group of people who are generally resented by their counterparts.

Foreign experts have been dubbed "academic imperialists" and "academic mercenaries" by local scholars. It is necessary to examine the objective meaning of these terms to understand the sociopsychological factors that also contribute to the prevailing intellectual environment in Kenya. Academic imperialists are seen as experts from international organizations who try to exploit their privileged positions and status accorded to them by governments and other institutions of developing countries to promote or push for certain ideas or studies. Kenya is rife with many such experts and almost all academics or senior civil servants have had some experience with them.

The mercenary type of academic are those experts who visit a developing country for a few days to a few weeks to undertake some kind of study or some such exercise and then write reports and make recommendations that often have far reaching consequences. Because these people do not have time to undertake serious work, they question local scholars to gain information and use any semiprocessed information that might be available at local research centres. Such fraudulent use of the intellectual labour power of Kenyan scholars seems to be on the increase according to the number of visitors who actually return for much longer periods but this time masquerading as experts in different government departments on the basis of their "prior work" in the country.

One curious contradiction regarding the recruitment of experts is that at a time when Kenya and other developing countries are inundated with experts, the World Bank and other donor agencies are strongly urging that the same countries slow down the rise in their educational expenditures. Such measures, of course, can only make access to education in such countries even less democratic than it already is, let alone the same countries never being able to produce highly skilled labour through their training programs at tertiary

institutions of learning that in any case absorb most of their educational budgets. The question now is whether reliance on highly paid "experts" in the short or long run is cheaper for developing countries than producing their own highly skilled labour.

In other more fundamental ways, the prevalence of expatriates and some "British Kenyans" in key sectors of the Kenyan society has serious repercussions in terms of the knowledge that is produced or the development experience that is made available. In the case of knowledge production, the process of how they influence what is done can be illustrated with an example of the predominance of prehistory in the kinds of research that were conducted in Kenya in 1979–81 and that suggest that more importance, time, and money are devoted to the study of the ancestors of Africans than to the present-day Africans — as if "the archeological ancestors of Africans were more lovable and noble than the current ones" (Ngugi wa Thiong'o 1981, p. 31).

With the kind of development experience that is made available, many of the expatriates come to work in Kenya without a full knowledge of the country's problems or requirements. In most cases, many of them are only defending the hegemonic interests of their countries. They know very little about the history or experiences of other regions of the world beyond that of Western Europe or North America. They have a natural bias for the traditional paradigm of development despite all the evidence to the contrary that has been discovered in the last few years. The tendency is toward reaction instead of progressive thought.

Where academic members of staff attend professional meetings and present papers, which is important for the exchange of information and ideas, they may also be inadvertently supporting the tendency toward reaction. During 1977–79, for example, more than half of the academic members of staff who attended meetings or presented professional papers abroad did so in Western Europe or North America. Slightly more than a fifth presented papers or attended meetings in other African countries. Another fifth or so went to the Middle East or Asia, whereas a much smaller number went to Eastern Europe or South America.

However, nowhere was the predominant world view of the Western industrialized countries demonstrated more than in the choice of economic studies over the political economy kinds of studies during 1979–81. In keeping with the tradition of neoclassical economics, most economic studies concentrated more on *exchange* (i.e., how people attempt to accommodate limited supply to excess demand and how these attempts interact through exchange) than on *production* and *economic relations between classes* and the process of development in the whole economy (i.e., the subject matter of political economy).

In conclusion, in intellectual production the University is not adequately fulfilling its obligations in terms of analyzing, interpreting, and explaining the Kenya condition. The University has probably contributed to its own weak position by not articulating its role in the Kenyan society forcefully enough. However, it must be recognized that a worsening economic and political situation has nurtured a persistent reactionary attitude by the state toward the University. This has been shown increasingly through budgetary cutbacks and neglect of the University and its problems. The state has made the University appear responsible for Kenya's development by implying it hampers the work the government does for the benefit of the people. This has made it difficult, if not outright dangerous, for students and faculty to engage in any

critical analysis, the supposed preoccupation of people in institutions of higher learning. In fact, the University has become an easy target of attack especially as a result of many of the protests by students and faculty in the last few years (Nkinyangi 1981).

Over time, a situation has developed where any form of critical analysis from the students or faculty at the University is equated with a preference for "foreign ideologies," which is taken to mean Marxism or Communism. The reprisals against people thought to be involved in such subversive activities are serious: police harassment, denial of official clearance to conduct research, withdrawal of passports to prevent travel outside the country, etc.,Such threats or punitive measures stifle academic freedom, the basis upon which intellectual production thrives.

The notion of academic freedom is derived from the general freedom of thought and freedom to receive and impart ideas and information and is guaranteed under the Kenya Constitution and the University of Nairobi Act. However, unless these provisions are honoured, the University will not be able to live up to what is expected of it by the Kenyan society. The end result can only be that intellectual production in Kenya will continue to be the prerogative of foreign scholars and the Kenyan reality will continue to be interpreted for Kenyans by foreigners.

The University has to overcome its social estrangement. It can only do this through the attainment of academic freedom to define its role in the Kenyan society more fully. However, academic freedom, like all fundamental human freedoms, cannot be given. It has to be fought for (Gutto 1980, p. 2). In the context of the Kenyan society, this can succeed only if the University is in partnership with the mass of the oppressed Kenyan people and is seen to advance the kind of knowledge, through teaching and research, that works to improve the social conditions of the Kenyan people. The University can do this only after it has overcome its own alienation and become a leader in intellectual production.

Appendix

The events reported below, or the official statements pertaining to them, occurred between January and November 1982, after the foregoing chapter had been written. No changes were made in the article as a result of those events. The events were subjects of public commentary during that period and all the information reported here is based on extracts from the Kenyan Press.

- *January:* The government stops the performance by Kenyatta University College of a play "Muntu" by Joe de Graft at the National Theatre on the grounds that it depicted violence. (The play was originally commissioned by the All Africa Conference of Churches to mark the assembly of the World Council of Churches in Nairobi in 1975.)
- *February:* The government denies a permit for the performance of Gikuyu musical "Maitu Njugira" (Mother Sing for Me) by the well-known Kenyan writer and former head of the Literature Department at the University of Nairobi, Professor Ngugi wa Thiong'o. (The play was written by Ngugi in collaboration with a cast of peasants and workers and was a dramatized documentary of the forced labour and pass laws in the colonial Kenya of the 1920s and 1930s. It tried to show the attempts of one Kenyan community to repulse these and other injustices and to survive as a unit despite tremendous official intrigue and brutality.)
- *March:* The government de-registers and moves in a heavily armed police force to dismantle the open-air self-help community theatre where Ngugi's musical was being staged. The centre had been built by the workers and peasants of the area. (During the

same period, restrictions are put on plays being staged by students at the Kenya Schools Drama Festival. All winning plays were critical of corruption and other social ills in the Kenyan society.)

• *May:* Spate of students' protests lead to the simultaneous closure of three colleges including Kenyatta University College. Among the students' grievances are low allowances and poor remuneration after graduation. After the closure of the colleges, students are banned to their home areas and ordered to report to their chiefs twice weekly. Rumoured "sympathy strikes" by the University of Nairobi lead the Minister of Higher Education to threaten that sympathizers will be sent home also. He announces that "inciters of unrest are being hunted down" and urges chiefs not to be lenient on students. Meanwhile, an official of the ruling Kenya African National Union party (KANU) calls for a probe on the causes of students' protests.

Oginga Odinga, a veteran Kenyan politician and a former Vice-President, is rumoured to be in the process of forming a socialist opposition party. (Forming an opposition party was then not considered illegal under Kenya's laws.) Odinga vehemently denies the rumours and says that he is loyal to the ruling party albeit that he was critical of its economic and political policies. (He had published some critical comments in this regard earlier.)

University of Nairobi students hold a Press Conference to support the idea of an opposition party and to state that there was need for another party "to test the popularity of differing opinions." Students warn that any attempt to suppress genuine opinion would lead to chaos. They state that "the Kenyan Constitution belongs to all Kenyans, and should be protected from Fascist-oriented maneuvers aimed at subjugating [Kenyans'] freedoms and rights."

A senior minister announces that the government will deal firmly with students for issuing a press statement critical of the government and the ruling party. He urges students opposed to those views to come forward and identify themselves with the ruling party and enrol as members. (It is not reported whether any students came forward as requested by the minister.)

Oginga Odinga and George Anyona, a former MP detained previously for his "radical" utterances in parliament, are expelled from the ruling party. Anyona is detained without trial under the Public Security Act for his reported plans to set up an opposition party. Odinga is subsequently placed under house arrest with only immediate members of his family allowed to visit him and other persons one at a time. A lawyer who tries to defend Anyona and one other detainee is also placed under detention without trial under the Public Security Act.

• *June:* Kenyatta University College and other colleges closed in early May are to reopen. However, students are to reapply for admission, make an apology to their principals and provide information "on who/what caused the riots" in May. Meanwhile, the Minister of Higher Education announces that all literature books for schools will now have to be cleared by his ministry to ensure that they are not "perpetuating foreign ideologies and violence." He says that "if this trend was allowed to continue, the youth would grow to hate the government."

The constitution is amended making Kenya a *de-jure* one-party state. Meanwhile, there is an appearance of publications said to be "seditious." A number of persons, including journalists and university lecturers are taken to court, jailed, or detained without trial on accusations of possessing "seditious" documents.

The government accuses some lecturers of teaching the "politics of subversion through books majoring in violence." The Minister of Higher Education spells out terms to ensure that "violent books are not used as set books in [Kenya's] secondary schools." The Minister says that beginning in 1983, the formal approval of the Director of Education will be required for all literature set-books. "The Ministry would exercise all power at its disposal to control and curb any ideologies . . . which may find their way into the secondary school system. Among other things, the Ministry will select lecturers for the University of Nairobi and Kenyatta University College." (Previously, selection of University faculty has been carried out by duly constituted boards of the University

operating under clearly stated guidelines enshrined in the University of Nairobi Act.)

A number of University lecturers, a journalist and two peasants (in their 70s) are arrested or detained without trial on accusations of possessing "seditious" documents. The crackdowns lead to a number of lecturers either fleeing the country or leaving the University. Lawyers refuse to represent persons "in trouble." According to one newspaper, lawyers "seem to be shunning requests to represent . . . people in the wrong books of the powers that be because of the recent detention of a member of the legal profession [who tried to defend the rights of a detained person]."

• *July:* The editor of a local newspaper ("The Standard," owned by the British multinational Lonrho) comes out with an editorial highly critical of the government's detention measures. He argues that these measures have made Kenyans live under fear and are likely to destroy the University by frightening away its lecturers. The editor calls for the release of all detainees and for the repeal of the Public Security Act under which the government can detain persons for indefinite periods without trial. The editor is dismissed and the board of directors of the newspaper company apologizes to the government.

University of Nairobi students call for the immediate release of all detained lecturers. Certain student leaders state publicly that they are "Marxists" and that "Marxism" is the answer to the problems confronting Kenya. Students also call on the Minister for Higher Education to withdraw the proposed students' loan scheme by August 12 or they would march to his office. They threatened that they should not be held responsible for what happened if anybody tried to stop them.

• *August–November:* On August 1, the famed political stability of Kenya is shattered by an attempted coup d'état by members of the Kenya Air Force. University students demonstrate in the streets of Nairobi in support of the coup. The coup is quickly put down by units of the armed forces loyal to the government. There is much loss of life and property. Students are among those killed. The University is closed indefinitely and students are banned to their homes and ordered to report to their chiefs. Restrictive travel orders are issued for University lecturers; passports of some are impounded.

The Kenya Air Force is disbanded, court-martials set up, and soldiers found guilty are jailed for many years on charges of "mutiny." A number of those found guilty of "treason" are sentenced to death. Some students are also tried and convicted for many years on charges of participating in the failed coup d'état.

On October 20, the President announces that the University of Nairobi will be disbanded and a new University created in its place. He says that the new University will ensure that "such an eminent institution of higher learning is made relevant to nation building requirements, with no prospect henceforth that it could lie in our midst as a source or instrument of destruction."

In November, the President announces the appointment of a review committee to look into ways of "restructuring" the University of Nairobi and to make recommendations.

Educational Research Capacity and Environment in Uganda: 1970–81

The author begins this chapter by laying out the historical background against which the reader can better understand the factors that influence the conduct of research, educational or otherwise, in Uganda today. Namuddu contends that the unification of Uganda, at the time of independence in 1962, was a difficult task because of the policies the British colonial government had employed to divide and rule. The British co-opted traditional authorities and then governed through a system of "indirect rule," i.e., the use of these traditional rulers instead of British administrators. The heterogeneous array of semiautonomous regions and traditional kingdoms and the different regional and social class interests that these arrangements implied ensured that Uganda did not see itself as one nation at the time of independence. Not only did some regions publicly declare their intentions to secede, but even within ethnic groups the various religious subdivisions were rapidly polarized into political parties and factions. The political atmosphere in the country was explosive — a precursor of events to follow 10 years later.

The author argues that the abolition of traditional kingdoms in the mid-60s and the resultant crises in different parts of the country nearly led to civil war, and the government of the day had to use the military to quell several civil disorders. It then tried several ways to bring about reconciliation among the different groups; none of these worked, however, because reconciliation with any one group only resulted in the alienation of another group or faction. With the overthrow of the civilian government by the military and the expulsion of Asians that the new government instituted almost immediately, the political as well as the economic situation of the country began to deteriorate rapidly. From 1972 onward, national security increasingly became an elusive dream and personal safety and survival the only overriding considerations in Uganda.

The traditional Western supporters of Uganda first delayed technical assistance but later decided to cut it off altogether. All institutions, private and public, began to flounder as they were gradually eroded of their professionals through massive resignations or unaccounted for "disappearances." At academic institutions, like the national university (Makerere), where most of the country's research was conducted, it was first the expatriates who left only to be followed almost immediately by many of the best qualified Ugandans. This made it difficult, if not impossible, to continue any existing programs, research or other, let alone initiate new ones. The exodus of qualified personnel had a traumatic effect on Uganda's ability to deliver most services. Moreover, there was a consistent erosion of the morale of those who stayed as they watched their colleagues and fellow citizens either depart or simply disappear.

Within this overall structural background, the author surveys the educational domain and what the period of instability and destruction meant to it in terms of diminishing the

Catherine Namuddu *Faculty of Education, Kenyatta University College, P.O. Box 43844, Nairobi, Kenya, in collaboration with Samuel Sekamwa, Faculty of Education, Makerere University, Kampala, Uganda*

country's capacity to conduct research. She concludes with a number of pertinent recommendations on what should be the beginning point in resuscitating Uganda's educational research organizations.

Every developing nation attempts to uplift the standard of living of its people through the provision of various basic social services, including education. The process is often slow and difficult due to the lack of proper planning, insufficient labour to implement programs, and insufficient initial capital investment. In Uganda, the process has been even more complicated particularly during the period 1970–81, which was characterized by political instability, widespread physical insecurity, and severe shortages in the government and nongovernment agencies that provide social services. In education, the quantity and quality of service was progressively limited to meeting recurrent expenditures and to solving routine and management problems.

Since 1970, little expansion has taken place in education except in the provision of facilities at the primary school. Thus, in 1970, there was a total of 2755 primary schools with an enrollment of 720 127 pupils. By 1979, according to the records of the Planning Unit of the Ministry of Education, Kampala, for 1970–79, the number of primary schools had risen to 4295 with an enrollment of 1 223 850 pupils. There has been no comparable expansion of facilities at other levels of education despite an increase in enrollment. Thus, at the secondary school level, for example, in 1970 there were 168 schools with a total enrollment of 40 970 students. By 1979, again according to the Ministry of Education, the number of schools had risen only to 198 with an enrollment of 66 730. Uganda urgently needs the injection of constructive and effective strategies and techniques to reestablish an efficient education service — a process that cannot occur without the reestablishment of realistic research and planning.

This paper discusses the structures, processes, and activities that have characterized the educational research environment in Uganda from 1970 to 1981. First, a description is given of the traditional and historical factors that bear on Uganda's ability to conduct and use research. The social factors and circumstances that have most likely interplayed to create the overall environment in which research is conducted are also discussed. I have relied on available historical documents and my own personal observations, especially in regard to the cause of instability in Uganda.

A description is also given of the observed patterns of educational research in an attempt to identify particular circumstances that appear to account for these patterns in terms of the structure of institutions, the processes of institutional evolution and maintenance, and the nature of leadership therein. The data for this section were collected in Uganda from existing documents found at Makerere University, the Ministry of Education, and the Ministry of Economic Planning. Where possible a cross section of personnel working in these and various other institutions with some research function were interviewed and their responses and opinions supplemented the data collected. In the last section strategies and activities for present and future action are suggested, deriving the rationale for such action from what was previously discussed in this paper and also from events and activities that are taking shape in Uganda.

Throughout the paper, I have tried to use as much of the descriptive data collected from Uganda as possible. It should be noted, however, that in several

cases such data are meagre, incomplete, and at times difficult to authenticate. I have, therefore, laid emphasis on explaining and interpreting these data and opinions.

Introduction of Modern Education and Origins of Research

Formal education was first introduced in Uganda in 1843. From the beginning, education was viewed as a mechanism to bring wisdom and knowledge to an uneducated people. Mukasa (1945) argued that education was the way to raise a country's progress and prosperity. An emphasis on learning to read and write resulted in the authorship of books by Ugandans so that by 1905 there were already a number of works describing observed social norms and historical events. From some of Kaizi's (1948) comments, it appears that interviews, although perhaps unsystematic, were used to collect data to supplement these authors' knowledge as far back as 1898.

The structure of the educational system, based on the original British model, has remained the same since Uganda achieved independence in 1962. The system is divided into four main levels. The primary school cycle of 7 years is followed by 4 years of lower secondary school. These two levels are the basic education service to the largest proportion of students. However, because neither primary nor lower secondary education is free or compulsory, it is estimated that only about 18.48% of all the children under the age of 18 years are actually enrolled in school.

After the lower secondary school, there are various institutions that form the third level of the system. Such institutions include teacher training colleges

In much of Eastern Africa researchers and policymakers are particularly concerned about low enrollment rates in primary school. With some education, the lives of children and their families might be very different.

for primary school teachers, nurse training schools, technical and commercial colleges and agricultural colleges, as well as a 2-year higher secondary school course. The fourth and highest level is Makerere University with 19 faculties and requiring an applicant to have had at least 13 years of education before admission. The total number of students up to the age of 21 engaged in some sort of schooling activity is estimated to be 1 434 005 plus another 5000 at the university. Uganda's total teaching force is estimated at 34 225 teachers.[1] Beyond these four levels of formal education there are a series of adult courses and other out-of-school activities in which several thousand people are enrolled.

Makerere was first established in 1921 as a technical college. In 1922, it became a college with medical, agriculture, veterinary science, elementary engineering and teacher training courses. In 1950, the college became a University College of East Africa in association with the University of London. In 1963, Makerere became the University of East Africa and, finally, Makerere University in 1970.

Educational research became one of the activities at Makerere as soon as the Institute of Education was established in 1948. The basic research methodology was a combination of library research and descriptive analysis of observed social norms and the delivery of educational services at the various levels of schooling. In 1950, the East African Institute for Social Research (EAISR) was established at Makerere University by the British government. Richards (1964) points out that the EAISR was at first mainly staffed by anthropologists engaged on a series of basic ethnographic studies of the peoples of Uganda and the neighbouring regions of Kenya and Tanganyika. Progressively, however, the EAISR expanded its intake of researchers to include political scientists, economists, and, a little later on, psychologists. The psychologists were particularly interested in using various comparative approaches. Thus, working in conjunction with medical practitioners, researchers extensively investigated areas such as infancy, precosity, weaning, and cognitive abilities (Gerber and Dean 1957; Gerber 1958; Ainsworth 1967; Kilbride and Robbins 1968; Kilbride 1969).

The dominance of psychological research in Uganda's educational research was reinforced in the mid-60s by the integration of the British-oriented enthnopsychological research with American-oriented sociopsychological quantitative research. Consequently, there were many cross cultural comparisons undertaken both by resident university researchers/teachers and by associated visiting researchers based at either the National Institute of Education or the EAISR.

By the late 60s, Makerere University College had clearly established itself as the central institution for the conduct of research in all areas of academic pursuit including education. The teacher education curriculum had specific methodology components offered to future teachers, as well as the requirement that each graduating student would, as part of his or her final assessment, undertake and submit a completed research project in education.

Indeed, these student research projects clearly indicate that by 1970, their research emphases compared to that of full-time researchers had clearly shifted from purely psychological problems in education to problems occasioned by the postindependence expansion in schooling such as the school dropout problem and the mismatch of curricula to national goals and aspirations.

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[1]The figures were worked out from somewhat questionable 1980 national census figures available from the Department of Geography, Makerere University, Kampala.

Generally, however, the capability of Ugandans to conduct research was still limited. From information on research conducted in Uganda (Langlands 1973), it is estimated that up to 1973, 85.73% of research papers and books in all fields was produced by foreigners and only 13.27% by Ugandans. In educational research, Ugandans contributed only 38.46% of the total number of papers sampled. Of this total, 78.72% is research based on a methodological combination of library research and descriptive analysis.

There were, however, several programs in progress to train Ugandans to take up university teaching posts, which automatically meant that they would be expected to conduct research. For example, the Teacher Education for East Africa Project funded by the United States Agency for International Development (USAID) assisted in training postgraduate secondary school teachers who might later gain higher degrees to become university teachers. The same program also sponsored the training of MA and PhD candidates abroad so that they could return to teach at the University. The Association for Teacher Education in Africa also sponsored MA and PhD candidates in American universities through funding by the Carnegie Corporation of New York. The overall expectation of the Staff Development Program of the University was to progressively replace the expatriate staff with Ugandans who had acquired research skill and teaching ability.

The Ugandan government in power from 1962 to 1971 stated its desire to see the education system address itself to new issues besides the expansion of schools. In an address to the Uganda Educational Association, President Obote (1969) challenged the educational system in Uganda in general, and the educational researchers and academicians in particular, to address themselves to the content and methodology of education at all levels of schooling. Moreover, the government committed itself to the provision of both financial and moral support in assisting Makerere University to institutionalize educational research to implement the changes in the educational system that the government itself had just proposed and had been outlined by President Obote (1970).

President Obote's government was removed from power in January 1971, and because the rest of this paper describes educational research activities that took place during the ensuing period, a time of severe political instability, a brief outline will be given of the root causes of instability in Uganda.

Causes of Instability

Obviously, there must be many reasons why the road toward creating and maintaining understanding among persons within common borders has been so bumpy and painful. Mujaju (1974) has argued, for instance, that a cultural gap and a wide disparity of incomes are the foundations of instability. To these two factors must be added the interplay between religion and politics for the designation of leadership and the half-hearted measures at institutionalizing national politics.

Each one of these factors has its roots in the country and in postindependence systems of government. Historically, the various ethnic groups of Uganda have had differential economic and political development, although in all of them blood kinship was the basis of political association. After colonization, to this ethnocratic political system was added the fact that religious affiliation became the basis of political association and action; this practice was enhanced by the fact that access to formal education was controlled by missionaries.

Because the British had exercised "indirect rule" in the Uganda protectorate, the granting of independence found in Uganda a heterogeneous array of semiautonomous regions of varying political power and parochial interests not easily mouldable into a unified nation. Thus, immediately before independence not only did some regions publicly request secession, but even within ethnic groups the various religious faiths were rapidly transformed into political parties and factions.

Thus, at independence in 1962, the political atmosphere was potentially explosive. However, due to a combination of conciliatory policies, shrewd political calculation, and the formation of various political alliances, relative stability was maintained between 1962 and 1966.

After the so-called 1966 Buganda Crisis when Uganda became a republic, several other factors were introduced that undermined the stability of the new republic. First, the declaration of Uganda as a republic at the same time abolished the traditional kingdoms; for those ethnic groups where such kingdoms provided a point of identity, resentment persisted and dissension and intrigue grew even within the ruling party. Second, because there was some physical opposition to the abolishing of the kingdoms, an ethnocentric and relatively rustic military had been used to restore civil order using some elements of intimidation, which created a division between the military and the civilians. Third, even though several means were used by government to bring about reconciliation between various groups, none of these reconciliations was ever fully successful because of what Mazrui (1975) describes as the multi-polarization within every major faction. Thus, reconciliation within any one group resulted in alienation of another faction within the group.

The result was ultimately that government was dominated by what Karugire (1980) has described as a preponderance of opportunism over principle in its management of public affairs. In the process, almost all institutions of government including the judiciary were tampered with and, thus, progressively lost public trust. In the final analysis, it was a combination of all these factors — intrigue within the army, dissension within the ruling party, and the suggestion for an introduction of a new political order promising radicalism and elusive gains to the military, the politicians, and intelligentsia — that precipitated the 1971 coup.

From that point onward, national stability, which had been undermined, became increasingly reduced as the social institutions that normally ensure stability were one by one prevented from functioning. This then is the background against which the educational research patterns that continued to exist must be examined.

Patterns of Educational Research

Institutions Conducting Educational Research

It has already been pointed out that Makerere University was and is still the central institution in which education research is conducted. Within the University, five main departments are involved in educational research: the Faculty of Education; the National Institute of Education (NIE); the Faculty of Social Sciences; the Makerere Institute of Social Research (MISR), formerly the EAISR; and the Centre for Continuing Education.

Outside the University, two units are involved in education research: the National Curriculum Development Centre (NCDC) and the Planning Unit, both departments of the Ministry of Education. Occasionally, some educational

research may be carried out by staff at the primary teacher training colleges (TTC) and technical colleges.

Outside of government, three religious organizations, the Catholic Church, the Church of Uganda, and the Muslims, carry out research for their own purposes rather than for public consumption, probably for planning of the social services that they offer. Thus, a total of 10 different units are involved in some aspect of educational research.

Organization of Educational Research

On what kind of structural framework is educational research organized? Traditionally, educational research was organized depending on the administrative framework within the unit in which it was being undertaken. At Makerere University, every researcher had to be attached to one of the five units mentioned earlier. Within these five units there were two systems of attachment depending on the level of the researcher and the purpose for which research was being undertaken.

Thus, academic staff by virtue of their being teaching faculty, were expected to conduct research to encourage professional growth and to produce new knowledge. Postgraduate students carried out research after registration in either the Faculty of Social Science or Education for courses leading to higher degrees. The MISR as a research unit provided the facilities and sponsorship for the conduct of research by associate research fellows and visiting researchers who were either full-time researchers or part-time teaching staff in the Faculty of Social Sciences, the Faculty of Education, the NIE, and the Centre for Continuing Education.

Within the two governmental units, educational research, which was either in the area of gathering and analyzing annual school statistics or in developing curricula, was carried out as part of regular civil service duty. Occasionally, research or "information" might be gathered as a specific requirement from a government department.

Educational Research Projects

From the types of educational research done, not only the purpose of the research, but also the purpose of the researcher in doing the research can be determined. The type and purpose of the information research carried out by the two governmental units have already been indicated. It is difficult to evaluate curriculum research that is carried out by the NCDC. As to work done by the Planning Unit, the efficiency and quality of such work progressively declined over the 11-year period. Up until 1967, the collection, analysis, and publishing of annual educational statistics were efficiently carried out on time. From 1968, however, it appears that although the annual returns continued to be gathered, analysis and publication of the data had slowed considerably. Thus, by 1972, a backlog of 3 years had accumulated. By 1981, despite efforts by staff to reduce the backlog, most of the returns from 1970 to subsequent years had not been analyzed.

Various educational research projects were undertaken by researchers at Makerere University for perhaps different purposes. The largest number of projects was undertaken by either permanent academic staff of the faculties or by visiting associate researchers at MISR. The second largest number of projects was undertaken by postgraduate students as part of their higher degree requirements. Much of the research done, however, was short term, individualistic,

unidisciplinary, relatively simple, and often very context dependent. It is unlikely that much of this research, although it provides very useful knowledge, would individually or together influence the national system of education.

In assessing the quantity of educational research projects undertaken from 1970 to 1981, one has to be cautious for the following reasons. Uganda has not yet published a single document where all research done in any one field is compiled. The "Uganda Journal" (Langlands 1973) attempted to list publications of research up to 1972, but this source is severely incomplete. Despite the requirement that all research done in Uganda must be approved by the National Research Council (NRC) — a unit initially under the Ministry of Economic Planning and later under the Office of the President — there is ample evidence to indicate that not all educational research that was carried out was actually approved. Thus, titles are found of published research that do not appear in the NRC records. Even if it is taken into consideration that some authors used different titles, their names should still appear somewhere in the records, but they do not.

In the absence of accurate NRC records, one must rely not only on published journal articles, but also on other records at Makerere University's MISR, the University Grants Committee, and various departmental records. With this system, there is a possibility of miscounting that may be compounded by the derivation and subsequent publication of several variously titled articles from one original research project.

It is difficult to classify the research projects according to Vielle's (1978) categorization of purpose partly because of the limited sample of projects found, but more significantly because when some of these projects are examined, their purposes do not lend themselves to meaningful classification. For instance, the majority of research by postgraduate students is done to fulfill a degree assignment. Implicit in this purpose is the acquisition of skills to carry out research. Within the research itself, the purpose may be to investigate the types of employment undertaken by school dropouts. Therefore, the classification used here is based on the topic or area of research. Accordingly, 12 areas have been identified.

Table 1 shows the number of research projects falling under each of the 12 major headings undertaken in the period 1970–80. (It will be noted that no data were available for the year 1981.) The period has been divided into two, which indicates more clearly the decreasing output in all areas, especially from 1976. A total of 163 research projects and publications was examined. If the number of researcher coauthors is added, and the number of articles by the same author originating from a single research project is subtracted, the remainder is 121 individual research projects, which is probably the most accurate estimate regarding the number of researchers working in Uganda at various times during the 10-year period.

The emphasis in the 12 areas is on development psychology and effectiveness of teaching methodologies, both research areas of historical emphasis in Uganda's educational research as was mentioned earlier. Three new areas of research concentration can be identified. First, teacher education became important, probably in response to the problem of having to train 900 teachers per year from 1973 to 1976 for the country's secondary school system to fill the gap left by the expatriate personnel. Thus, research envisaging new and more efficient techniques was proposed. Second, career education research addressed the problem of unemployment of school leavers. Third, the

Table 1: Research categories, 1970–80

Research category	1970–75	1976–80	Total
Organization of preschool, primary, secondary, and higher education	17	3	20
Effectiveness and methods of teaching of various subject areas at primary and secondary school	26	3	29
Educational cost evaluation at various levels	7	1	8
Construction of curricula for fostering political socialization	8	1	9
Evaluation	12	2	14
Adult education	5	1	6
Teacher education	5	11	16
Developmental psychology	24	4	28
Career and vocational education	22	2	24
School-community interaction	9	2	11
History of education	3	0	3
Sociological interactions	6	1	7

Note: No data were available for 1981.

development of curricular projects suggested how social studies curricula could bring about political consciousness and foster national unity.

It should be noted, however, that for more than half of the counted projects there is no evidence whether these projects were completed or not. Thus, of the 37 research projects initiated by postgraduate students in the Faculty of Education between 1970 and 1979, only six projects had been submitted for examination by December 1980, according to the records of the University Grants Committee, Makerere University. Lack of funds, as will be discussed later, was a key factor. Perhaps even more important was the constant changing of supervisors who were replaced by postgraduate students as the former left the country. These changes often regressed or delayed research and dampened the enthusiasm of the researchers.

In addition, there are 13 educational research projects (according to NRC reports for July 1970 to December 1974, January 1975 to December 1976, and January 1978 to December 1978) that were approved by the NRC and funded directly from government but for which no further information is available as to their 1981 status. The exceptions to these trends are educational research projects carried out under the sponsorship of MISR. Here, all 19 projects initiated between 1970 and 1975 were completed within the same period. This is probably because all these projects were done by foreigners who came into Uganda with their own research funds, collected their data in short but intensive periods, and subsequently retired to more peaceful countries to analyze and publish their data.

Is there a discernible specific Ugandan trend to educational research activity from 1970 to 1981? This is a difficult issue to decide from the incomplete evidence of the projects examined. As already noted, there were three new areas of research designed to solve some of the problems in the educational system. But the overall pattern of topics reflects more or less the prevailing international trends rather than a specifically Ugandan-evolved research trend. The reasons for the lack of what may be termed "divergent evolution" in educational research in Uganda during a 10-year period of relative isolation from foreign influences is somewhat puzzling. Because these reasons are probably associated

with the total environment for the conduct of research, they will also be examined later.

Data Base

The basic source of information for educational research is probably the library. The Kampala Public Library is now a small complex whose holdings were severely depleted without any attempt at restocking. Similar small libraries are to be found in all major urban centres away from Kampala.

Makerere University has one main library. According to Makerere University's annual report for 1969, this library had accessioned 113 464 books and pamphlets and about 3000 titles of periodicals and other regular documents. The projected growth was put at 15% per year, which would have brought the book and pamphlet holding to half a million by 1980. In 1981, in the Purchase and Accession Records for 1970–79 of the University's main library, the total number of books, pamphlets, and periodical holdings was estimated at 320 000. The various university departments have libraries as well. The NIE houses the education library with an estimated total holding of 45 000 volumes. The MISR's library has about 4000 documents on Africa. Unfortunately, all libraries in Uganda were seriously depleted through wear and more seriously through damage by mutilation and by theft. Perhaps the best and most complete archives are kept by the Catholic Archives Unit and the Church of Uganda Archives. In addition, there is a government archive and a museum, both in serious need of restocking.

A good example of the need to restock libraries is provided by the educational journal holdings in Makerere libraries. There is a considerable backlog of educational journal issues that have not been received over the past 10 years. Indeed, if the theses and dissertations presented for examination between 1972 and 1979 are studied, some of their bibliographies are small and often outdated. The absence in the library of journal issues is not, however, the result of inadequate acquisition of new titles. Indeed, by 1971 only 67 titles of educational periodicals were being received in Makerere; this figure had risen to 144 titles by 1980. However, of the total 144 titles, only 45.11% of the issues were received and of these only 16% were received in 1977–80.

In an effort to share research information within and outside Uganda, various university departments started their own journals. For example, the agriculture department published "Agricole" in 1973, the departments of commerce and economics together published the "Uganda Economic Journal" in 1973, MISR started the Research Abstracts and Newsletter in 1973, and the medicine department had the "Uganda Medical Journal." By 1977, all these publications had ceased due to lack of paper and other printing facilities, but the initial initiative they took was not reflected by the educational research community where no new journal was started. If anything, educational research dissemination declined faster than other areas, because, by 1974, the NIE's journals, "The Teacher" and "The Science Teacher," had ceased printing, and by the end of the same year the postal services to teacher training colleges had been suspended.

Other supporting facilities for research include the Institute for Applied Statistics, whose staff operate in an advisory capacity on the design of research methodologies and the analysis of data, and two computers: one in the Ministry of Finance and Economic Planning and the second at the University. Only the

computer at the University provides the researcher with the facilities for analyzing educational research data. But the presence of a computer has encouraged the belief that all research done has to use complex statistical formulas worked by the computer. Thus, for many researchers time is wasted trying to understand how the computer works because of the lack of qualified statisticians and technical support staff. Moreover, because simple ways of dealing with equally simple figures have been abandoned, the researcher must wait for computer time or more often for repairs to be made to the equipment.

Overall, then, the keeping of any kind of record is in a difficult condition; manuals, journals, books, indigenous literature, the public archives, and the museum are in a poor state. Any serious program to reestablish and improve research capacity will have to consider the improvement of the data base at the same time.

Environmental Influences on Research

National Insecurity and its Effect on Research Capacity

National security increasingly became an elusive dream from 1972 with peak periods of personal insecurity between 1974 and 1977. After the Asian community had been expelled from Uganda, the traditional Western supporters and sponsors of various facets of the economy and the social services began first to delay support funds and finally to cut off their aid and grants to the government. The decline in economic production due to mismanagement appears to have increased hand in hand with personal insecurity to both foreigners and especially to Ugandan nationals. Thus, all social institutions were gradually eroded of their professionals, leaving some of these institutions with personnel barely sufficient to maintain their existing programs and certainly unable to initiate new programs.

Makerere University was no exception, and from 1970 onward resignations more or less replaced the normal staff departures after contract expiry. According to the annual reports and staff lists of the University, during the academic year of 1968/69, for example, the total establishment of Makerere was 240 with nearly 60 visiting researchers. There were 29 departures and no resignations. During 1969/70 the establishment rose to 332 with 79 visiting researchers. In 1971/72, out of a total establishment of 420, there were 346 positions filled. During this year there were 69 resignations and 26 departures. On 1 February 1980, out of an establishment of 600 posts, only 291 were filled.

Naturally, it was first the expatriates, and then most of the best qualified and senior members of Ugandan staff who left. Every department's programs were affected, as professors, senior lecturers, and other lecturers who probably found it easier to get employment outside Uganda left for countries such as Kenya, Tanzania, Zambia, Botswana, the United States, Britain, Nigeria, and the Transkei. Many professional Ugandans were also taken by various organizations such as the United Nations, the World Bank, and the International Monetary Fund. Overall, however, most of these professionals remained in Africa in various teaching positions.

It is difficult to overestimate the traumatic effect of this exodus on Uganda's overall ability to deliver social services. Equally detrimental was the constant erosion of the morale of those who remained as they watched their colleagues depart and their fellow citizens disappear. Yet, Makerere University,

in the face of this immense strain on its personnel and resources, surprisingly remained an active and resilient institution.

The resignations and departures of staff, however, were never en masse. The somewhat gradual departures often allowed some form of recruitment, although of lower calibre, to be made. Thus, in some instances even though objectives were enunciated for increasing research capacity, these objectives could not be met. A case in point was the 1972 Faculty of Education triennial development plan 1973/76. One of the objectives of the proposed plan was to intensify and expand programs of research in education through higher degree training. It was envisaged that at least 100 students would be enrolled in research and higher degrees during the 3 years. This increase in research undertaking was premised on a projected increase in teaching staff. Thus, from 1974 to 1976, 49 students registered for the MA in education by research only and another 8 by coursework and dissertation. During the same period, however, the faculty recruitment stagnated so that out of a projected staff of 49, 51, and 52 during 1973/74, 1974/75, and 1975/76, only 21, 22, and 28 members of staff were available, respectively (Omoding-Okwalinga 1976). As a result most of these postgraduate students were themselves recruited into teaching, especially those on the coursework programs.

Yet the reasons for the resilience of Makerere are perhaps best sought in the quality of the culture, often referred to as the "Makerere spirit," which an institution as old as Makerere must have nurtured in the 50 years of its existence. Three of the components of this culture and tradition were ethnic tolerance, diligence and determination, and a spirit of teamwork. Specifically, because Makerere had managed to transcend the intrigues of ethnic boundaries, it could use its administrative and academic traditions to demand hard work and discipline from all its members. Whenever crises arose, and there were many such crises, team spirit was called upon to preserve these traditional and cultural symbols that the institution represented. Although some people, perhaps, were too timid or unconcerned to leave, had too few skills to "sell" abroad, or expected to benefit by the departure of others, I believe it was largely due to the desire to preserve these cultural Makerere traditions that some people stayed when they could have left, and others returned when they could have remained outside Uganda.

Yet when every effort to survive by Makerere has been assessed, the single most important factor that emerges is the confirmation that research, in every field, its organization, its quality and quantity, is primarily dependent not only on the quality of the members of the institution, but on the stability of the overall environment. Without this stability it is virtually impossible, especially in a poor nation, to harness all the other inputs necessary for research to be done.

In Uganda, the periods of greatest instability often came at a time of transition in values and priorities. Thus, in 1971, Makerere University was in the process of really institutionalizing educational research through trying to evolve a national education policy. Unfortunately, in a period of instability, even when genuine changes are implemented, they are bound to fail due to counter maneuvers. A combination of instability, political repression, and extreme poverty also led to the unlimited growth of two other social phenomena, both of which seriously affected the conduct of research and the development of research skills. These phenomena were corruption and what may be termed "intellectual nomadism," these continued to have some repercussions on the reestablishment of sufficient research capacity and a viable research environment.

Corruption not only resulted in the disappearance of the meagre resources and materials meant for public use, but also led to uncurbed ambitions by some individuals to reach the top through combative and punitive means. This in almost all cases led to institutional instability occasioned by resignations, demotions, and recruitment of unqualified personnel.

Bronowski's (1973) assertion that, "civilisation can never grow on the move" has had its equivalent in Uganda. Just as everything in nomadic life, because of its constant movement, is difficult to record and note, so is the existence of individuals and institutions during periods of repression. For example, one is amazed at the number of events that appear to have passed without record; the number of committees and subcommittees that were appointed but never met and never produced anything; and, of course, one is struck by the stream of leadership that passed through various governmental and institutional top posts within the 10-year period without any trace of its accomplishments.

All these factors affected the available research skill at Makerere. First, as academicians left the institutions, the remaining colleagues were deprived of motivation, ideas, and criticism. Second, and equally as significant, was the fact that most of the able academicians remaining in Uganda were constantly, and sometimes permanently, claimed by an assortment of various administrative jobs that stifled their initiative and dwarfed their abilities because in almost all cases such jobs were outside their expertise.

Leadership in Institutions Conducting Educational Research

Because the five main departments involved in educational research belong to the University, they have suffered relatively little in terms of their leadership. The department heads at Makerere are selected primarily on the basis of academic qualifications and experience. All five units were fortunate enough to have had able leadership at these particular times. However, the effects of poor leadership in the broader spheres of other social institutions affected the University's work. The two other units of the Ministry of Education were seriously affected as leadership and governing boards within the Ministry's machinery were at times overbearing political appointees who were often ignorant of what their institutions ought to do.

One of the units affecting the functioning of the other research institutions was the NRC. This unit's function was to approve research projects that receive money for funding directly from government. Another function, already mentioned, was to "clear" research so that such research could be done within Uganda. The council has five expert committees who judge the projects on their suitability, but the criteria for approval or rejection are not defined beyond the project being "beneficial" and "relevant" to Uganda.

During the 10-year period, the expert committees had a frequent turnover of membership undoubtedly due to the unusually high mobility of personnel in the country. Thus, at certain times, members with doubtful abilities for the task became extremely parochial, approving only projects that were to be carried out in their own home districts regardless of the worth of such projects. Moreover, some expert committees appeared to be very suspicious of research projects that merely requested clearance and not funding. Thus, they would take a long time before issuing or denying clearance. This is probably the main reason why some researchers circumvented the NRC and carried out research without authorization, thus, leaving no record of their work with the council.

Overall, leadership changes were and still are frequent, making it impossible to demand commitment and accountability. Moreover, the same leaders may often be too busy with other institutions' work to plan effective action such as seeking funds and planning developmental activity and directions for their own institutions. For example, during the collection of data for this paper, none of the institutions visited had a set of concrete priorities or targets beyond general statements of intent.

A serious shortcoming of both leadership and personnel in all these various units doing educational research is the lack of communication and interaction between and within units. Seminars, for example, are few and far between. Few individual researchers know what is being done by their colleagues, and, because within some units the proper lines of authority have been overtaken by political decisions, the division of labour is vague, with frequent assertions of future changes in leadership, which reduces cooperation and team spirit. Also because none of these units has sufficient authority to effect changes that should logically follow research results, units such as the National Curriculum Development Centre work under great strain knowing that their work may never influence political decisions on national curriculum changes.

Effects of Isolation

The effects of isolation from foreign influences can be seen at two levels; first, on the type of research done, and, second, on funding patterns. The lack of evolution of a Ugandan brand of research has already been mentioned. One would have expected slants in research methodology, topic selection, and, of course, use of research results to evolve as a result of isolation. One expects, for example, studies on adaptation of various educational practices to conditions of economic hardships or a systematic search for educational services that increase efficiency without increasing expenditure or requiring expansion; but none of these problems was tackled. Instead, several studies dealing with replicating Piaget's ideas or teaching new mathematics or English as a second language are found.

One reason for this persistence of foreign influence already mentioned is that British and North American educational and psychological journals continued to be the main source of information on education research outside Uganda. Thus, maintaining "international standards" meant that Ugandan researchers selected their topics only after combing the available journals for related interests. Similarly, even where researchers could have probably developed more suitable methods in the Ugandan context, they chose to restrict their work to how best to fit the scarce resources to the usual "scientific procedure."

It is to be expected that particular academicians' traditional interests, which were unlikely to be related to problems arising in the mid-70s, dominated their own research, and any research done by either visiting foreign associates or Ugandan students abroad was unlikely to be influenced by circumstances in Uganda. In both these cases, the researcher came with an already defined question and methodology and tried to carry through on the original plans. There is also an indication that the fieldwork and data collection for quite a large proportion of this research were done in either 1970 or 1971, even though publication does not take place until 1974 and onward.

Thus, it appears that the effect of isolation on the nature of research was in fact to reinforce the traditional tendency to follow international trends. This

might be viewed as a poor strategy because whatever results were obtained were less likely to be relevant to the solution of Ugandan problems. The strategy's merit was, however, that it kept the researchers aware of what was going on outside, and it probably enabled those who eventually had to leave the country to move with something acceptable to their colleagues abroad. It may just be the case that while in some communities divergent innovation increases during periods of repression and isolation, in Uganda the educational research community opted to stay close to the tried and true. This is certainly evident in the area of research methodology.

Funding Patterns for Educational Research

The effect of isolation from foreign influences with regard to funding research in Makerere was extremely severe. Traditionally, Makerere's total research program had been supported mainly from outside funds. Lule (1970, p. 2) pointed out that the government financial provision for research was limited and that outside bodies had supported research activities with funds totaling more than 1 million pounds sterling.

The effects of cutting off most of these funds were probably more severe to educational research than, for example, to agricultural research. Education research had not yet established "traditional funding agencies" because long-term research projects had not yet evolved to demand this sort of commitment. Thus, the overall result was the stunting of the piecemeal projects that had been initiated in 1971.

Because some of the envisaged projects in 1970 would have been long-term studies mainly on the quality of educational services, these innovative projects were never initiated. There were two further complications: that the majority of research grants were usually combined with a scholarship to do a higher degree, and that the bulk of grants for research done in Uganda was given not to Makerere institutions but directly to the foreign researcher. Thus, after 1972, when both scholarships and funds given by foreign donor agencies dwindled, so did research, because the remaining funding agency, the Makerere University Grants Committee, had its own hardships as a result of lack of funds.

Over the 10-year period, 455 scholarships were obtained for staff development, with 240 of these tenable abroad. Of the 455, 125 scholarships were taken up in 1979, and of 330 students expected to have remained in or returned to Makerere, by May 1981 only 58 were present. In education alone 30 scholarships given by eight different foreign agencies were taken up over the 10-year period. Another 11 scholarships were given by the Ugandan government. Of the total 41 students who took up these scholarships, 19 remain outside Uganda.

Several nontraditional sources of funds assisted Makerere over the 10 years. The United Nations Development Programme (UNDP) and the World Health Organization provided qualified staff to work in various departments, especially in veterinary science, medicine, engineering, and statistics. Also assisting were the Association of African Universities based in Accra, the Arab League, and countries such as the Soviet Union, Pakistan, Hungary, Yugoslavia, and North Korea, all of which provided personnel and scholarships for both short-term and long-term programs. But education rarely benefited from such sources of funds because the educational systems of such countries were quite different from Uganda's, thus, making it impossible for students to do postgraduate work in those countries.

Several unofficial mechanisms were adopted by Makerere academicians to obtain individual funding. On the one hand, traveling to Kenya became frequent because the University of Nairobi and Kenyatta University College employed several Ugandan members of staff who continued to supervise their postgraduate Ugandan students across the border. On the other hand, several Ugandan researchers personally approached some international donor agencies based in Nairobi and in most cases research or study funds were given on an individual basis either to study in Kenya or to return to Uganda to carry out some research project.

Several international agencies supported exiled academicians by providing the funds either to write on a topic of interest or to give institutions in Kenya money to employ Ugandan academicians and researchers. Hence, many Ugandans participated in the Ford Foundation's small grants projects, which encouraged research in the social sciences in Uganda on an individual basis. Outside Uganda, the International Development Research Centre's (IDRC) Displaced Scholars' Program was instrumental in maintaining Ugandan research skills in Kenya and sometimes in other countries. But, once again, the number of researchers in education was quite small on both of these programs.

The availability of funds is perhaps one of the most fundamental issues that will affect the reestablishment, development, and maintenance of a viable educational research capability in Uganda. Activities that need to be undertaken are discussed in the last section of this paper.

Government Attitude Toward Educational Research

One of the key components of the environment in which research is done is dependent upon the interest in and policy toward research expressed by government. The attitude of successive Ugandan governments toward educational research can be characterized at best as indifferent. This attitude is probably a colonial legacy because, although research institutions or stations were set up for agriculture, medicine, and veterinary science, no similar organization was envisaged for educational research. The EAISR later MISR set up in 1950, was not originally designed for the study of educational problems but for anthropological and sociological research.

Because the preindependence education system had many inequalities, the changes instituted after independence appeared to work well without the benefit of prior research. Thus, over the years, this situation contributed to the belief that in education, research was not really necessary for decision-making or for the implementation of change especially as political leadership increasingly took over the decision-making role of both the Ministry of Education and the various institutions associated with it.

Civil servants frequently deny the need for education research by arguing that it is often impossible to "see" the benefits of education research comparable to those in agriculture, medicine, and technology. The insistence by educational researchers that the major improvements in these fields are the result of an earlier improvement in the delivery of general education itself based on even earlier research abroad is, unfortunately, undermined by the fragmented nature of the research previously done in Uganda.

The single occasion on which government has shown reasonable interest in research has been in connection with an evaluation research of the Namutamba Integrated Project for Rural Development. This is a project funded by the

United Nations Educational, Scientific and Cultural Organization (UNESCO) designed to explore and demonstrate ways and means of providing primary school children in rural areas with general, prevocational, and vocational education. The project began in 1967 and was evaluated in 1974, and the government on the basis of the findings of the evaluation team has given the NCDC a mandate to incorporate some of the project's curricula into the primary school science curricula.

Improving Educational Research

Rationale

In assessing the problems besetting educational research in Uganda, one is perhaps overwhelmed by the immensity of the task that lies ahead. Where can institutions and agencies both within and outside Uganda begin? Specifically, who should be supported, by what means, and using what procedures? In suggesting strategies that may be considered by both researchers and donors, I believe that, for Uganda, any mechanism of support for educational research will have to function within the overall strategy for improving the management planning capacity of the whole educational system.

One of the fundamental activities prerequisite to planning new changes in the whole system has already been undertaken by the government through streamlining the activities of the National Committee of Inquiry into the National Education Policy. This committee, which has existed under different titles and chairmanships since 1974, has as its main purpose to evolve a national learning system and service free from traditional and fragmented points of view and free from wasteful duplication at all levels of schooling. Ugandan educators are optimistic that the evolution of a national education policy will call for many fundamental and realistic changes and improvements.

Herein lies the immediate and long-term need for the support of educational research, because, although the committee may tour various parts of Uganda to assess the situation and conduct interviews and hear submissions from individuals and organizations, it will still not have the comprehensive information that should inform the changes in the educational system that it must propose.

The strategies to evolve and implement support for educational research as envisaged here are at two levels: an interim and immediate set of strategies to start things moving and a long-term objective to maintain and expand educational research. If the committee's statement is going to influence positively the future of education, social direction, and the management of public affairs, the results of systematic research are required.

The implementation and evaluation of these strategies should also provide useful insights to governments and donors in situations similar to Uganda's. However, one always hopes that other countries will manage their affairs more wisely to avoid similar regression and retardation.

Strategies for Support of Educational Research

In April 1979, enthusiastic promises of aid were made to Uganda. Subsequent events have clearly established the fact that international good will is quickly reduced to indifference unless a nation quickly sorts out its internal problems. Fortunately, there are indications that stability and personal security

are increasingly being restored in Uganda. What, then, are the most appropriate interim measures to be undertaken, given the prevailing constraints?

Clearly, educational research needs personnel, money, and supportive resources, and perhaps equally important it urgently needs the organization and harnessing of resources in a realistic direction. The two most viable institutions in which these supportive measures can be converted to useful results are the Ministry of Education and Makerere University. To implement new strategies, changes and adaptations in attitudes and policies may be necessary. For example, donor agencies may have to consider nontraditional approaches to potential researchers and approve funding in nontraditional areas of funding. Similarly, Ugandan institutions might have to drop some prejudices, for example, those concerning their perception of what academic research is.

Availability of Information and Dissemination

Accurate information on Uganda's education system is not easily obtained, because as already mentioned, the Planning Unit, which is supposed to collect, analyze, and disseminate this information, is itself under reorganization and only beginning to carry out its work efficiently. Thus, it would appear that the first strategy between researchers and donors should be the exchange of information. At both the institutional and individual levels, one of the most serious factors preventing the evolution of visible trends in educational research is the lack of simple but necessary information on issues such as who funds research, what are the procedures for proposal submission, where are the proposals sent, what information beyond the research project do donors request, and what are their funding policies and procedures. These and a host of related questions when unanswered limit and stifle initiative. The systematic provision of this sort of information is very important after a period of isolation, in that it opens doors previously closed and gives hope for cooperation.

Increasingly, donors are encouraging an initial dialogue between individual or institutional representatives and their field staff. This dialogue is especially important in Uganda where it is necessary to understand social conditions before evaluating the content of research proposals. In short, there is a need for a concerted effort for Makerere to seek out the donors and for the donors to send information to departments for distribution to individuals or visit the various units involved in research.

Training Researchers

There is little doubt that for educational research to be done, new personnel will have to be trained to supplement the efforts of senior researchers who are already overburdened with teaching and administrative duties. The aim, however, is to employ training strategies that will quickly but carefully build up both a research capacity and the innovative potential to initiate and respond to new programs and handle the frequent problems that will no doubt arise.

Perhaps the most expedient and efficient manner to achieve this is to ensure that the training programs for researchers at all levels have as their central objective the production of actual, usable research results. In other words, research skill acquisition and production of usable research results should both be the product of the same training experience. This type of

training may be premised on the fact that Uganda's highest priorities today for the development of education are to gain a better understanding of the existing realities of schooling and aspirations so as to shape policy and to link education to productive work.

The first priority calls for a comprehensive school mapping research exercise that will lead to establishing a data base. No other research is going to have a more immediate utility for improving the effectiveness of future educational plans. Because of the size of the exercise, in its planning, its implementation, and in the analysis and interpreting of the data, it can be assumed that all researchers, trainees, and education students can have ample opportunity to gain basic research skills while also meeting their academic obligations. Thus, where higher degrees are the ultimate objectives, trainees could undertake case studies or secondary analysis of data, or use subsequent annual statistics after the initial mapping exercise.

The second priority can be tackled in a similar manner, although it lends itself more to individual and long-term action research to establish viable programs that would link education and work. It is obvious then, that for the interim the funds solicited would be directed toward these two areas. Apart from the usefulness of the data for planning and the acquisition of research abilities, this process of training establishes a working partnership among trainees, trainers, and government units. The projects selected would form part of a broader development effort and ensure the emergence of multidisciplinary approaches and collective response to educational research and the use of its results.

Building Research Structures

First, for the interim period, there is need to mobilize the existing educational research capability within institutions, outside the Ministry of Education, and outside Makerere. Ways may, therefore, have to be worked out with various church organizations so that their resources can contribute to the national pool. In some cases researchers may be concentrated at the main institutions for certain periods while working on specific problems. This might require changes in staff appointment policies and criteria.

Second, there is the need to build a documentation centre whose responsibility would be to collect, record, and lend all information on education in Uganda. A search for past work should be made and all this information should provide the second component of the baseline data for future research. The documentation centre could be located at one of three existing units, the MISR library, the NIE library, or the Makerere Computer Centre. It should be located where existing technical staff can be employed with a few specialists.

Third, there is the need to establish a coordinating body for educational research. This body would bring some systematic approach to research problems both in the short and in the long term. It would, for example, coordinate policy and the solicitation of funds for major projects, explore consistently the "next research question," and provide the plan and direction to national research efforts that past efforts have always lacked.

Fourth, some other infrastructural improvements beyond the ones already mentioned would have to be supported. For example, the training of technical supporting staff for libraries, the documentation centre, journal publications, and maintaining of dissemination mechanisms will have to be developed simultaneously.

Funding of Support Strategies

All the activities described so far will not happen unless funds become available. The Ugandan government is unlikely to invest in educational research to the extent required because of more visible demands on its meagre resources. Therefore, for both short-term and long-term development, educational research will have to rely heavily on international funding. Perhaps Makerere as an administrative unit will continue to be the central custodian of whatever funds may become available. The question of distribution of funds can, therefore, be easily dealt with within the mechanism already established by the University Grants Committee, but on a more open basis, and certainly one amenable to scrutiny and criticism.

The two projects suggested are both institution-funded and administered projects, and it will be up to Makerere to take the initiative to seek and persuade various donors to share their cost. Apart from generating the funds for the research projects, there must be initial funds for carrying out feasibility studies. This is an area where donors could be of assistance. For the school mapping exercise, a feasibility study is necessary to determine real problems and to assess the amount and type of local resources and infrastructure existing that could be mobilized in project implementation.

Such a feasibility study would once again open channels of communication between rural communities and researchers and ensure their future support. Because all the projects envisaged have built-in training components, smaller grants may be given to individual trainees to enable them to fulfill their academic requirements over and above the national projects.

One other area of support that donors may have to add to their list is the provision of scholars to Makerere on a short-term basis to carry out specific research training programs. These scholars should be demonstrators, not directors of projects or programs. The donors should be wary of channeling their money to associate researchers who come to do research on an area of interest quite unrelated to Ugandan national policies. Researchers who do not fall into the categories already described should be accepted only if they are prepared to work on a facet of the overall national project. In the past, there has been too much research on interests unrelated to Ugandan national policies with the result that when all this past research is taken together, it does not add up to a potentially useful foundation for planning and policymaking.

The exception to the above requirements may be in the building of the research structures. These various activities may be funded as a series of small projects but ultimately contributing to the evolution of the required structures.

A permanent feature of the evolution of educational research should be the establishment and maintenance of local, regional, and international research networks. This kind of activity requires specific funds for items such as information exchanges, seminar and conference support, travel, publications, correspondence, and acquisition of documents and journals. Thus, every step in developing a new educational research capacity and environment in Uganda should strive to eliminate the past tendency toward individualistic and isolationist research where only the researcher knows what he or she is doing and why. The scarce resources must be used to benefit a large portion of the community of researchers and the country as a whole. The strategies suggested here should form a foundation to work effectively toward those aims.

Problems Hampering the Development of Educational Research Capacity in Mali and Senegal

This study looks at the various factors that have permitted or hampered the development of research in general and of educational research in particular in Mali and Senegal. It starts with a discussion of the social and economic conditions in both countries and of their impact on economic and social policies. Summary statistical information about the most important social and economic indicators is analyzed, and is followed by a historical overview of the forces that have contributed to the development of the educational system.

This overview is followed by a presentation of the general state of research in both countries, most particularly their ideology of research, the identification of the institutional bases where research takes place, and the structural organization of research activities.

The following aspects are reviewed concerning the state of research: (a) where such research is actually being carried out, (b) what kinds of studies are being carried out, (c) for whom these studies are being carried out, and (d) how the results of such studies are being used.

To have a better understanding of these issues, a summary description of some of the major educational experiments being carried out in these countries is given and an attempt is made to see whether educational research has played or is playing any role in them, and if not, why.

The study concludes that the development of educational research capacity in Mali and Senegal has been hampered by structural and ideological problems, a lack of financial resources, personal conflicts, and inadequate training in research methodologies. In the final analysis, it recommends the establishment of regional capacity to identify common educational problems, suggest priorities for investment, and develop a local graduate training program in educational research.

Economic and Social Conditions in Mali

Mali is considered one of the poorest countries in West Africa. According to the World Bank, its per-person yearly income, estimated to be U.S.$120 in 1977, is among the lowest. The bulk of its population, about 6 million in 1978, is rural and lives off agriculture. Agricultural production is still at the subsistence level in most areas, and, traditionally, is concentrated in the production of locally consumed foodstuffs. The total salaried population is thought to be below 100 000.

In 1972, of the active population, about 84.4% were involved in agriculture, 5.2% in stockbreeding, and 1.8% in handicrafts. Of those in agriculturally related activities, 1.8% were in commerce, 2.6% in modern economic activities, and 2.3% in government.

Miala Diambomba *Faculty of Education, Laval University, Quebec, Canada*

On the whole, this population is young. It was estimated in 1972 that 60% of the Malians were under 20 years of age. Of these, 32.2% were in the 0–4-year-old bracket and 30.1% in the 5–10-year-old bracket. This same structure is found in the active agricultural labour force. In 1973, 60% of them were under 25 years old and only 8.4% were more than 55 years old. Recent data compiled for the statistical service in Mali indicate that this structure has remained basically unchanged.[1] What these data show is that, unlike other developing countries, Mali is basically an underpopulated country. In 1973, its population density was estimated to be about 4.2 people/km^2.

This is, however, misleading because, in spite of its size, about two-thirds of Mali is almost entirely desert and contains only one-eighth of the population. The majority of the Malian population is south of the Niger River, where agricultural conditions are more hospitable. It is also misleading to give too much attention to this apparent low density, because this does not imply that the demographic situation in Mali is any less serious than in other West African countries. In some cases, this problem appears to be very acute indeed. Mali suffers, as do other developing countries, from a relatively strong rural/urban migration, and the problem has been accentuated in recent years by the harsh drought conditions experienced in the Sahel regions. The urban population is still less than 10% of the total population, but it is expanding at a rate of 7.4% per year both as a result of migration from rural areas and as a result of improvement in infant survival rates because of better living conditions.

Rural/urban migration has begun to create adverse economic conditions in both environments. On the one hand, it has tended to raise the demand for foodstuffs in the cities, and, on the other, the ensuing loss of the rural labour force has led to a decrease in rural agricultural productivity. Most of those who move to cities are young people in search of employment; because employment is scarce in the private sector, they end up in the public sector, which is already overstaffed. Also, the young people who move out of the rural areas are potential agriculturists, and, consequently, the aging adults are not replaced in the labour force, creating a deficit in the number of people available for rural labour.

Mali suffers from another type of migration: the flight of the trained cadres of all levels to neighbouring countries and overseas. It is well known that Mali has suffered a chronic shortage of qualified teachers for its schools; in some cases, the government has been able to fill its need for teachers by lowering the qualification criteria. It is equally well known that one of the principal reasons for the persistence of this problem is that qualified teachers move to the neighbouring countries in search of better pay almost as soon as they are trained. The solution to the internal and external migration problem lies, in part, in the improvement of the living conditions in rural areas and of the pay scale in the modern sectors; however, this has been difficult to accomplish because of structural and cyclical problems.

Among the structural problems that Mali has faced and that make economic growth difficult are the following:

- Because Mali is an extensive country there are difficulties in both internal and external communications. It lacks a stable financial base, so the development of an internal transportation network has been difficult. There are 12 000 km of

[1]Information on the economic and social conditions in Senegal was obtained mainly from: Assemblée nationale (1971); DEP (1971); Carma (1974); Direction générale du plan et de la statistique (1974); World Bank (1976, 1979).

Equal educational opportunities for women are a major challenge in Senegal as in most of the developing world.

roads, but only 1600 km of these are hard surfaced. There is also an extensive river waterway through the Niger River, but equipment is lacking, the river is cut at several places by rocky portions, and navigation is sometimes made difficult by falling water levels. For overseas commerce, Mali relies on the ports of Dakar and Abidjan; the distances involved, however, require reliable road or railroad networks, which neither the Abidjan–Bamako road nor the Dakar–Bamako railroad are because of insufficient equipment.

• Another difficulty is the over-emphasis on export crops. As elsewhere in Africa, in Mali there is a coexistence between the traditional sectors and the modern sectors. In contrast to suggestions made in dualist theories, these are not wholly independent; in Mali, the modern sectors appear to flourish at the expense of the traditional sectors. The industrial crops exported or used as raw materials within Mali are generally bought from traditional producers at prices that are below reasonable market levels. In fact, it is the existence of such low prices and, consequently, high profit margins for those in the modern sectors that has led to a trend to substitute the traditional crops with industrial crops. The traditional millet and sorghum are progressively replaced by exportable crops such as cotton and groundnuts. Obviously, such substitution has intensified the decline in foodstuffs production and has resulted in an increasing dependence on external sources for such needs. Financing imports of such foodstuffs is, however, becoming increasingly difficult because of falling revenues from the exportable crops due both to international cycles and to drought.

The Sahelian drought is one of the cyclical problems that Mali faces. Another is the prices charged in international markets. The drought is thought to have contributed to the fall in the production of millet and sorghum from 750 000 t in 1972 to 516 000 t in 1973. It has also decimated the livestock in some

of the most affected regions. The fluctuations in the revenues received from exports due to the generally falling prices have intensified the foodstuffs crisis because this has resulted in a decrease in Mali's capacity to import.

Impact on Economic Policy

In response to the economic and social situation in the country, Mali appears to have, since its independence, opted for a self-reliant ideology. Because the country is not rich and, consequently, it is unlikely that the kind of surplus required for a rapid industrial development will be available in the foreseeable future, it has been assumed that the road to development in Mali must pass through agriculture. The development strategy that has been adopted since the early 60s, therefore, emphasizes the improvement of economic and social conditions in both rural and urban areas through a more effective and efficient utilization of the available resources and of the local technology.

To do this, a series of measures was adopted. First, there were structural changes in the organization or production in rural areas. Agroindustrial centres were established to raise production levels. Called "opérations de production," these schema use modern agricultural machinery; but they are also used as centres of diffusion of new technologies to the rural people. These centres provide the villagers with new seeds and fertilizers together with information on their use.

To improve rural capacity to absorb this new production technology, the government has encouraged the development of cooperatives at the village level. The new cooperative units are meant not only to ensure a more effective diffusion of the new technologies, but also to reenforce the position of the villagers vis-à-vis the buyers of their produce from the towns.

A second measure has involved the educational field. To ensure that the villagers would absorb the new technologies and to motivate them to produce more, a functional literacy program was set up for those who had not had a chance to attend formal school. For those in school, transformations of the curricula were proposed to make them more compatible with the needs of the rural environment.

In short, all national activities had to be organized in such a way as to maximize production efficiency in all sectors. To ensure that the people's aspirations did not go beyond the country's capacity to satisfy them, a strong appeal to nationalistic sentiments was made through the media.

Impact on Educational Development

As indicated, the realization that Mali could develop economically through an efficient use of its available resources led the government to put strong emphasis on human resources development. This meant a transformation of the curricula inherited from the colonial period and an expansion of the school system. Before describing the kinds of policies adopted to achieve these objectives, the principal characteristics of the education system at the time of independence will be outlined.

As in other African countries, there was actually a dual educational structure in Mali before independence. There was the traditional system, based principally on observations and copy of habits and customs of older generations, and there was the system instituted during the colonial period.

Although the traditional system was functional to the indigenous social environment, its reliance on empiricism and mimetism reduced its ability to promote innovation and change. A greater emphasis was, therefore, put on the development of educational institutions patterned after those of the colonizing country. But these new institutions were created not to promote innovation and change in the indigenous environment but only (a) to socialize the colonized to the production values of the colonizing system and to provide them with the minimum of technological knowledge deemed necessary for the tasks to which they were assigned in this system, and (b) to influence their own value system in such a way as to lead them to accept or at least to accommodate the colonial presence. The number of institutions created and the type of education encouraged, were, therefore, dependent on these objectives. Because Africans were to play only a minor role in the colonial system, the level accessible to them was limited. Also, the demand for industrial workers and managers was limited by the agrarian characteristic of the Malian economy, so enrollments were severely limited; as in other African countries, access to the schools was reserved to the sons of chiefs, catechists, and emerging African bureaucrats who were to be used for the colonization process.

Consequently, only 7% of the school-age children were in school in 1960. Development of the postprimary level was severely limited; in fact, there were only nine teachers of Malian nationality in postprimary institutions during the same year. Needless to say, higher education was nonexistent. To reverse this situation, the government introduced structural changes in the organization of the school system as well as in its curricula. The ensuing educational reforms of 1962, therefore, had the following main objectives:

- To reorganize the educational system to provide schooling to the largest number of school-age children as well as to adults and youth in the rural areas who did not have a chance to go to formal school. The aim was to reach a 100% rate of enrollment among school-age children within 10 years;
- To ensure that the kind of education provided to all was functional to the needs for skills in the environments for which they were trained. The school programs were, therefore, professionalized at all levels; even those enrolled in classic paths had to be exposed to practical work to permit them to enter the labour market without any further training;
- To minimize the costs for the expanded educational system, cycles were shortened, and examinations, which were the cause of dropouts, were eliminated between cycles; and
- Because the government did not have sufficient funds to develop school infrastructures in all regions and villages, the parents were asked to contribute either by building these infrastructures themselves or by donating to a fund to be used for this end. Associations of students' parents were organized and were asked to assume this burden.

A detailed analysis either of these policies or of their accomplishments is not the objective of this study. However, the reform has not been wholly successful for many reasons, among which are:

- Lack of financial resources has limited the expansion of the system so that rather than reaching 100% of the school-age children, only 20% attend school;
- The professionalization of the schools has been met with resistance; in fact, the majority of the students both in secondary schools and in higher education prefer nonprofessional paths;

• Educational costs have not been reduced because there is still a high wastage level in the system. Not only has the number of repeaters and dropouts remained high, but the system has become very bureaucratic.

Mali has, however, succeeded in setting up a functional literacy program that, in some areas, has been relatively effective.

Economic and Social Conditions in Senegal

Senegal is slightly more advanced economically than Mali.[2] Senegal's per-person yearly income, estimated to be U.S.$500 in 1970, is among the highest not only in Black Africa but also among Third World countries. Senegal's economic, social, and ecological characteristics are similar to those of Mali. As in Mali, the bulk of the Senegalese population, estimated to be close to 5 million in 1973, lives off agriculture. In fact, groundnut production is the principal source of revenue not only for rural people but also for the government. Senegal is, however, economically more advanced mainly because of its geographical location. Because of its coastal location, the country was used as a door through which much of former French West Africa was colonized. Up until the time of independence in 1960, its capital, Dakar, was the capital of all of the West African French colonies; as such, the city benefited from most of the investments in administrative, social, and economic infrastructures. Hence, the modern economic sector in Senegal is more developed than it is in Mali. This is evident in the size of its salaried labour force. In Mali, the salaried labour force is estimated to be less than 100 000; in Senegal it is about 1.5 million.

There is a strong similarity in the structure of the labour force in both countries. The most recent demographic data show that 84% of the working people are in the primary sectors, 7% in the secondary sectors, and 19% in the tertiary. The predominance of agriculture in the economy shows in the occupational distribution of the labour force; these data show that about 95% of the total labour force consists of farmers and unskilled workers. Senior- and middle-echelon skilled workers and the managerial class count for the remaining 5%. The senior staff, of which about half are expatriates as in the middle-echelon category, makes up 1% of the total labour force.

As in Mali, the Senegalese population is essentially young. In 1973, about 60% of the Senegalese were under 20 years of age. In terms of population density, Senegal is almost as underpopulated as Mali. In 1975, Senegal's population density was estimated at 4.2 people/km^2. As in Mali, this figure is, however, misleading, because Senegal has comparable ecological conditions. Although northern Senegal is not as desertic as northern Mali, the general conditions prevailing in Sahelian environments, prevalent in both countries, force the bulk of the population to live in southern regions.

Not only is the population unequally distributed, but Senegal, like most developing countries, faces a relatively strong rural/urban population migration. In most Sahelian countries, this problem has been accentuated in recent years by severe droughts. According to the most recent demographic data, the urban population makes up about 20% of the total population, and this appears to be increasing constantly not only because of the migration but also because of

[2]Information on the economic and social conditions in Senegal was obtained mainly from: Assemblée nationale (1971); DEP (1971); Carma (1974); Direction générale du plan et de la statistique (1974); World Bank (1976, 1979).

the improved life expectancy in the cities made possible by the advantages of modern living. In a sense, the problem is more serious in Senegal than in Mali, not only because of the relatively large percentage of the urban population in relation to those in the rural areas, but especially because the higher degree of modernity of cities such as Dakar creates a higher level of illusions about the benefits of city life; the rise in aspirations that such illusions create explains the young people's strong attraction to urban centres. Even if the modern economic sector is relatively more developed in Senegal than in Mali, the influx of the population into urban areas is higher than the capacity of these sectors to absorb new labourers. As in the other developing countries, most of these people tend, therefore, to end up in the public sector, public administration, and government enterprises; these are increasingly becoming overstaffed.

The swelling urban population has the same impact as in Mali. The loss of rural labour leads to a fall in the production of foodstuffs while their demand is constantly increasing in the urban areas. The labour problem in Senegal is further complicated by the influx of labourers at all levels from other African countries. As mentioned earlier, Dakar has been a main attraction for the French West African colonies. The type of living it represents in the minds of other West Africans has attracted a number of people to Senegal.

In spite of the fact that its economy is more advanced than that of Mali, Senegal also faces similar economic problems. Internal communications are slightly more developed, but lack of adequate equipment makes movement of goods and services within the country relatively difficult. Senegal also faces the same cyclical problems as Mali. Like most developing countries, Senegal depends principally on one crop for its revenue: groundnuts. This dependence leads to two types of problems. First, as in Mali, there appears to be an over-emphasis on export crops at the expense of foodstuff production. Second, dependence on one crop makes the Senegalese economy extremely vulnerable to the fluctuating export prices in international markets. This situation is rendered more difficult by the nature of its sizable modern sectors. Again, like most developing countries, these sectors are made up principally of commercial activities, and the goods are usually imported; the falling revenues due to the deterioration of the prices in the international markets obviously negatively affect the country's capacity to import the needed goods. Because the population that depends on such imports is larger in Senegal than in other West African countries the decreasing capacity to import creates serious social strains in urban areas.

Senegal does have a developing industrial sector. However, the manufacturing activities are also limited by the foreign exchange problem. Not only are such activities limited by the lack of raw materials and replacement parts, which the country cannot import at the required pace because of the foreign exchange problem, but these difficulties are generally created by foreign investors whose motivation to invest in the country is affected by their fear of not being able to export their profits.

Unlike Mali, Senegal has another source of revenue: the tourist industry. Unfortunately, the same problem afflicts this industry. The capacity to attract tourists depends on the performance of the modern sectors, which in turn rely on the capacity to import. Tourism must also depend on international conditions, which in most cases cannot be predicted. In spite of its relatively high level of development, the Senegalese economy faces the same general problems as those of Mali.

Impact on Economic Policy

In general, Mali and Senegal face similar problems because of similar social, economic, and ecological characteristics. But they have not reacted in similar ways to these problems. Although both have proclaimed to follow a socialist path, there is a significant difference in the extent to which such proclamations have influenced their economic and social ideologies. Since the early 60s Mali adopted an ideology based on self-reliance; as such, it adopted economic and social policies that were directed inward. Senegal has also talked about self-reliance, but its policies are based on liberal economic and social philosophy. In fact, these policies are based on the ideology of an open system where outside forces are given a principal role and are used as a means to achieve development objectives. It is because of this that the modern sector is more important in Senegal. In this sense, Senegal is more dependent on external environments than Mali.

The decline in the production of foodstuffs and the realization that economic well-being in the country is dependent upon the development of agriculture has recently led the Senegalese government to attempt to improve social conditions in an effort to prevent rampant migration to the cities. Like other African countries, rural incomes are low in Senegal; in spite of the fact that a sizable part of the national revenue comes from the rural sector, personal income among farmers was estimated in 1973 to be between 10 000 and 40 000 CFA as compared to the urban areas where it ranged between 250 000 and 300 000 CFA for the Senegalese and between 2 and 2.5 million CFA for the expatriates.

In spite of talk about the need to improve the production conditions in rural areas, there does not seem to be a coherent policy toward such objectives. Some attempts have been made to encourage villagers to use new production technologies such as fertilizers and new agricultural methods but these have been sporadic. It even appears as if most of these efforts have been made mainly because of interventions by international agencies. Although the economy of Senegal is relatively more developed than those of most of other West African countries, this does not appear to be the result of a coherent development policy; it appears to result mainly from the position that Dakar has enjoyed as a crossroad in the region.

Impact on Educational Development

Like Mali, Senegal has a dual educational structure. There is the traditional structure, based mainly on Koranic education and the modern system instituted during the colonial period. The bulk of the population is in the traditional education structure and, because it is based mainly on memorization, it is estimated that close to 90% of the Senegalese population is illiterate.

The high degree of illiteracy is a strong illustration of the nature of French colonial policy in West Africa. As mentioned in the case of Mali, the colonial educational system was instituted not as a means to promote indigenous development but only to achieve colonial objectives. As such, the Senegalese education system was, at the time of independence, patterned on the French system and geared to elite training. The goal was to prepare the chosen few who were to go to university and subsequently be used in the colonial administration and in the colonial enterprises (which currently make up the modern

economic sector). The result of this elite education policy was that only 22% of school-age children were enrolled in schools in 1960. It is also the reason why Senegal has a small, but well-schooled, high-level managerial class.

The French orientation of the school obviously tended to remove the children from their native environment and, consequently, caused them to shun all types of manual work, including agriculture, which provided the revenues permitting them to attend school. The school system was, thus, a principal factor in the acceleration of the migration toward urban centres.

Because the modern economic sector could not absorb all of those who moved into the urban areas, the school system can also be considered as a basic cause of unemployment in the cities. In fact, in addition to orienting the pupils' aspirations toward the urban environment, those who did move into the cities refused manual work even when this was available.

Recognition of this problem at the time of independence led to a slight reform of the educational system. This first reform did not, however, involve a fundamental transformation in the system; rather, the main objective was, as in other African countries, to restructure the educational pyramid to expand enrollment at all levels. As a result of this reform, enrollment has increased 9% per year between 1960 and 1971 at the primary level, and 19% in the secondary schools, 7% in vocational schools, and 13% at the higher-education level. This has raised the overall rate of enrollment for primary school from 22% in 1960 to 33% in 1980.

The increase in enrollment without reform in school curricula only aggravated the unemployment problem in the urban areas and the lack of trained labour in the rural areas. A new educational reform was, therefore, proposed in 1969. Its basic objectives were to professionalize the educational process to produce a labour force capable of entering the labour market at all levels without further training. The main elements of this reform for the primary and secondary levels were:

- To reduce the length of primary education from 6 to 5 years;
- To limit access to secondary schools to only 20% of the primary-school graduates and to orient 90% of the remaining students to informal practical training provided through "enseignement moyen pratique" (middle-level practical training);
- To divide secondary school into three main fields: classics (6.7%), modern (43.3%), and technical (50%) all geared toward university education. In addition, a vocational path was created;
- To reduce the number of repeaters; and
- To maintain primary enrollment rates at about 40–45%.

A ceiling in enrollment levels at both the primary and the secondary levels was decided upon to prevent production of skills beyond the number of labourers required by the economic and social sectors.

A similar reform was proposed at the higher-education level. Until then, the university, patterned on the French model, trained students more in literary subjects than in technical ones; thus, the curricula did not reflect the situation in the labour markets. Higher-education reform called for the creation of technical schools in addition to universities for training the needed technical labour force. University enrollment was to be reduced to levels compatible with the demand for higher-level personnel in public administration and in the economy. Several problems were, however, met in the realization of this reform:

- The reform was formulated without an accurate appraisal of its implications in terms of enrollment and flow, costs and finance requirements, and output and absorption by the labour markets; and
- No appraisal was made of the attitudes of the various parties involved in its implementation: the students, parents, administrators, and teachers.

The generalization of the reforms in the education system was, therefore, made conditional on the completion of investigations on these issues. Some of the innovative changes that were experimented with in the school system were:

- To provide training for the rural uneducated and the urban unemployed;
- Technical institutes were created at the secondary level to provide workers with trained middle-level skills appropriate for industries and agriculture; and
- Technical "grandes écoles" were created at the higher-education level to produce workers for both higher- and middle-level technical labour.

The generalization of these innovations, however, has still not taken place, because no studies have been made to evaluate their impact. In fact, some of the elements of this reform have been questioned merely on the basis of inadequate information about the general reform itself. This appears to be the case in the conclusions of the recently held "états généraux" on education, during which the reform has been declared a failure. The problem is that new changes are now being proposed without a clear understanding of the reasons why the first attempts to reform the system failed.

Educational Development and the Need for Education Research

The educational problem faced in Mali and Senegal, and the need to carry out education reforms, can be better understood by exploring the relations between the education systems and the context in which they are organized. Educational systems in all situations are offshoots of the physical and social context in which they exist. Because of this, there are actually as many educational systems as there are societies. The many educational systems are different because the problems they help solve differ from one environment to another and, in some ways, from one period to another.

It is this difference that is the basis of the educational problem in Mali and Senegal, as it is in other African countries. Not only are the educational systems instituted there during the colonial period related to a social setting that has little in common with the local environment, but the systems were created and transplanted in such a brutal way that they have not succeeded in becoming part of the local setting. The essence of the educational problem in these countries, therefore, has to do with the disfunction between these European educational systems and the African social and physical settings.

This disfunction between the transplanted educational structures and the local social context has led to numerous problems that Mali and Senegal, like most other developing countries, find difficult to deal with. The educational systems were expanded in the early years of independence, because it was thought that this would accelerate the process of development, i.e., the achievement of conditions associated with the industrial countries. In the process, however, it is apparent that these educational systems are sources of problems that are even more severe than those they were intended to solve. In the first place, the values that are imparted to the pupils create new aspirations based

on the conditions prevailing in industrial countries that the indigenous environment cannot satisfy, in part because the potential for its development is undermined by the transfer of its labour and of its surplus goods to the urban economy. These aspirations cannot be satisfied by the modern economy either, because they are beyond the level that it can accommodate; also, because the economic systems are monopolistic, their expansion is limited to levels that permit those in control to receive the high returns they seek. These systems are, therefore, unable to absorb the increasing number of people coming out of the schools. The result of all this is an increase in disguised and real unemployment among young people, which leads to a severe delinquency problem in the urban areas and, of course, to an overall decrease in productivity in both the traditional and the modern sectors.

The decrease in the productivity of the traditional economic sectors, which is overwhelming in terms of the number of people who still depend on the productivity of those sectors for their livelihood, is also said to result from the disorganization of the traditional social and economic life, which the expatriate values taught in the schools have tended to encourage. The result has been a loss of the traditional technology before it could be replaced by a new one and the exploitation of the older generations by the younger generations who refuse to participate in their parents' "nonmodern" activities, even though it is through these activities that their schooling is financed.

The decrease in economic productivity is, however, accompanied by a constant rise in the cost of schooling. In fact, the average cost per pupil even at the primary level appears to exceed many times the per-person income in the rural areas; this means that rural families often have to sell assets to be able to fund their children's schooling.

The reform of education in Mali and Senegal has, therefore, been initiated to control these problems. Its basic aims in both countries are:

- To professionalize the schooling process through the incorporation of practical work at all levels. It is thought that this will direct the attitudes of the pupils toward the type of work that is expected of them. The hypothesis here is that the pupils will ultimately like and accept manual work if such work is a part of their curriculum;
- It is felt that a reduction of the length of the school process to reduce the costs of schooling will not affect the quality of education acquired by the students if the process is accompanied by the use of the local language in teaching and local materials as pedagogical tools;
- Introduction of functional literacy programs in rural areas will increase rural productivity because not only new technologies are transferred through such programs but the values acquired by the rural people lead to favourable attitudes toward modernity; and
- The overall impact of the introduction of such measures is a stabilization of the rural population and, therefore, a lessening of the unemployment problem in the urban areas.

Because these hypotheses have not been tested anywhere, these educational reforms are basically experimental ventures. As such, their success depends largely on the system's capacity to carry out and to evaluate the results of the experiments — in other words, the extent to which educational research has developed in response to the need to assess the results of educational change and innovation.

Scientific Research in Mali and Senegal

According to Shaeffer (1979), "research may mean different things to different people." Vielle's broad definition that research is a production of knowledge, can, however, be accepted. As such, research activities can be simple or complex, depending on the characteristics of the environment in which they are undertaken. In fact, the decision to produce knowledge is a function of the need to do so, and the need is "created" by the nature as well as the magnitude of the problems that the particular environment faces.

This also suggests that whichever of Vielle's strategies of "investigation and innovation" (research about research, content research, research for planning, evaluative research, and action research) is undertaken in any society depends on the nature of the problem faced there and on its magnitude.

The need for a type of research different than what would normally arise can be created consciously or unconsciously. Colonial situations have consciously created a need for certain types of investigations. External assistance programs still do the same thing. An example of an external assistance program is the West African Research Training Program. Because this training program focuses on empirical quantitative research that has not traditionally been carried out in the European tradition of research in Francophone West Africa, it has actually introduced a new type of research activity in the region. (This training program has been organized mainly at Laval University, Quebec, Canada since 1975 to train educational researchers from Francophone Africa. It is jointly funded by the Canadian International Development Agency (CIDA) and the Ford Foundation.)

The consequence of all this is, however, that just as there may be a disfunction between the educational systems instituted during the colonial period and the educational needs in the indigenous social environment, there also may be such disfunction between the types of research activities introduced in the region and the manifest need in the region. This disfunction, which will be discussed later, has probably affected the development of educational research in Mali and Senegal.

Research Ideology in Mali

In an internal document of the Ministry of National Education, research is, like the education system, considered as a tool for achieving social objectives:

> Our research will be turned toward action, toward practical realizations in order to help provide our country with simple equipment and methods, suitable and efficacious in the domain of economic and social development. . . . The aim of our scientific policy will be to build our country through the scientific data which it will provide . . . and not just for simple intellectual satisfaction or for the search of a fantastic future.

This does not, however, mean that this "programed and oriented research" should be isolated from the rest of the world. The document, therefore, adds:

> . . . finally, our research will be open to Africa and to the world, it will be enriched by external contributions at the same time that it will bring its own contributions to universal progress through the original solutions which it will find for problems common to Mali and to many other countries.

The insistence on practical and simple research continues in the declarations of Malian authorities. The Malians resist complex and expensive research because they think that it will turn research from its normal role, which should be the search for "solutions to the numerous socioeconomic problems" faced by the country. This resistance is manifested in declarations made against the introduction of such complex tools as the computer; it also is noted in their apparent rejection of individual research, which they think tends to cause researchers to undertake projects simply for intellectual satisfaction or for personal gain.

Structural Organization of Research Activities

Recognition of research as an important tool for policy formulation and implementation led to the creation in 1962 of a Conseil supérieur de la recherche (CSR). This council, which operated under the umbrella of the Ministry of National Education, was composed of representatives from other ministries and from specialized agencies; its mandate was to coordinate research activities undertaken in these different ministries and specialized agencies. CSR was, however, unable to play this role because of the nature of its structural organization. Because it was composed of members of units that resented the autonomy of the CSR, it was difficult to forge a common research policy; even without insisting on the adoption of a common policy, it was difficult for the council to discuss "specific research problems" such as those pertaining to applied research whose responsibility was essentially in the hands of the Ministry of Agriculture.

In reality, one of the main problems of CSR was its location within the Ministry of National Education. If it had been on neutral ground, it would probably have functioned. Its failure, according to Malians, is also attributed to the novelty of the interest in research and of the lack of experience in research coordination.

Failure to convene the council during its existence led to its replacement in 1967 by another institution called the Conseil national de la recherche scientifique et technique (CNRST). To deal with the structural problems that had prevented the CSR from assuming its coordination role, this new institution was situated in the Office of the President of Mali. Its mandate, wider than that of the CSR, was formulated as follows: (a) to ensure the development and the coordination of studies, research, and scientific works of all types; (b) to secure information about research activities in other countries and to promote cooperation with such countries and with international research organizations; (c) to ensure the publication and the diffusion of research results in Mali; (d) to collect and conserve scientific documentation in museums, archives, libraries, collections, etc.; and (e) to provide scientific data needed for the success of nation building.

To achieve these general objectives, CNRST was asked to fulfill the following specific tasks: (a) determine research needs; (b) establish priorities and program research activities; (c) propose ways to ensure an effective extension of research results; and (d) determine the material and financial needs for the realization of the research program.

In brief, this new council was not only to coordinate research activities, but it was also to define a research policy. Situated in the Office of the President, but at a level sufficiently high in the government structure, it was thought that

such a policy would have a better chance of being accepted and implemented by the ministries.

The structural problems did not, however, disappear with the CSR. The new research organization was confronted with the same type of resistance from ministries whenever CNRST tried to find out what was taking place in their research units. Even though CNRST's various parts were composed of delegates from the ministries, the ministries made no effort to involve CNRST in planning and implementing their activities. Among the numerous reasons cited for this were (a) the fact that some of these delegates were contested even within the ministries because of the manner in which they had been selected, which meant that they could not speak for their superiors; and (b) frequent absences from meetings due in part to apathy and to the fact that the members of the commissions had full-time jobs elsewhere.

CNRST also appeared to face severe financial problems. In fact, the apparent lack of enthusiasm in it suggests that the responsibilities entrusted to this organization at its creation were more theoretical than realistic, because in neither of the ministries was research considered a priority and thus, in neither was there a will to invest in it. Another related problem was staff instability. Between 1967 and 1968, CNRST had, successively, three different secretaries-general. This of course created a problem of permanency and of continuity of action.

There has been no other attempt to create another central research body in Mali since the disappearance of CNRST. Some of the tasks that were supposed to be performed by CNRST have been taken over by the Division of Scientific Research, which is a subunit of the National Directorate of Higher Education Institutions and of Scientific Research in the Ministry of National Education. As a coordinating agency in the way that CSR was, this division has been given similar responsibilities.

The structural problems that prevented both CSR and CNRST to function appear, however, to persist. The different ministries are still jealous of their autonomy and still do not willingly accept transfer of any information to this coordinating unit. In fact, because the Division is structurally situated at a much lower level than either the CSR or the CNRST, collection of information even from the institutions that are under the authority of its parent directorate has been quite difficult. Thus, the Division does not appear to know what is taking place in the institutions of higher education.

Research activities are, therefore, undertaken in a diffuse way. Each institution functions independently, and the types of activities undertaken are decided upon on the basis of the interpretation of its needs and mandates and not on a national program. This is of course a reflection of what is taking place in other facets of national life. If there is no coordination of research activities, it is because there is no such coordination in the policies of each of these institutions. For example, because rural development is the primary objective in the Malian development policies, almost all ministries have programs concerning aspects of such policies. Some aspect of education for rural youths or adults can, for example, be found in the ministries of education, rural development, production, and youth and sports and each of these has its program. Although they are all doing the same thing, there is no effective coordination of their activities.

Is there a research policy in Mali? Most of the Malians who are interested in the issue think that there is no such policy. What is carried out responds

not to coherent efforts, which should normally have resulted from the prominent place that research has generally been thought to have, but to internationally supported projects such as the development operations. Nowhere in the budget of the Malian government is there any clear reference to funds for research.

Development of Educational Research

As mentioned earlier, the development of education in Mali was influenced by the nature of the economic and social objectives that the country sought to achieve; this is evident not only in its professionalization and the consequent resistance to the creation of a more theoretical type of institution, such as the university, but also in the historical development of higher education. The professionalization of education proposed in Mali varies from what was being proposed elsewhere in Africa, because, in Mali, it was recognized that this could produce the intended results only if the kind of training dispensed related to the characteristics within the Malian traditional, social, and economic context. It was based on the assumption that tying the training process to the local environment would generate positive attitudes toward both the professions and the environment for which the pupils were being trained.

The implementation of this scheme, therefore, called for a process of continued evaluation of the results achieved in relation to these assumptions, and this implicitly means development of research activities at the same pace as the development of education. To what extent educational research developed and to what extent such development influenced the development of education follows.

Educational research activities are supposed to be carried out in the following institutions: the Directorate of Statistics and Planning in the Ministry of National Education, the Institut pédagogique national, the Direction nationale de l'alphabétisation fonctionnelle et de la linguistique appliquée, and the École normale supérieure and its counterpart, the Centre pédagogique supérieur. Some education-oriented studies appear to be carried out also at the École nationale d'administration, especially in matters relating to educational finance and to economics of education. But, is research actually being carried out in these institutions and if so under what conditions?

Directorate of Statistics and Planning

The Directorate of Statistics and Planning produces two types of studies: it compiles education statistical data and it uses these data for the analysis intended for educational planning purposes. The data are usually found in the educational statistics bulletin published annually by the Directorate. Mali is one of the few countries in Africa where a series of such data has been available for a number of years. Although questions are raised about the validity of some of the statistics provided by the schools (it appears that some of the schools filled out the questionnaires sent to them just because they felt obliged to do so and that there was no control over the veracity of the information provided), the trends shown are of useful interest to the planners.

Besides this compilation of information, this unit plays a major role in planning the educational system. Studies have been done on the dropout and repetition problems as well as on enrollment projections.

Institut pédagogique national (IPN)

According to the documents describing the objectives and the conditions

for the implementation of the educational reforms of 1962, the IPN is supposed to play the most important role in the formulation of education policy in Mali and its implementation. Among its various roles is to carry out studies of innovative programs, especially with respect to the effectiveness of the training in producing relevant skills in the shortest time possible, and to propose, as a result of the conclusions reached in such evaluation, new orientations in training methods and in programs.

The first attempt to create a unit that could do such studies within IPN did not take place until 1975. This was proposed, in part, as a reaction to the need to provide a stable work structure for the researchers who were to be trained through the Ford Foundation/CIDA-funded West African Research Training Program based in North America. Before this proposal, research groups were organized by objectives. There was, for example, a ruralization team designed to do the groundwork needed for the introduction of indigenous elements in the fundamental school programs as directed by the objectives of the reform. In a sense, however, these groups did not really do research; they collected information on environmental conditions both in the schools and in the social setting at large, with only a limited attempt to analyze it. Analysis of such information was attempted at national seminars, but, in essence, the conclusions of the discussions at such meetings resulted more out of intuition than out of analysis.

Direction nationale de l'alphabétisation fonctionnelle et de la linguistique appliquée (DNAFLA)

The DNAFLA was created to organize functional literacy programs for adults and young adults in rural areas. As for the formal education sector, these literacy programs were to be functional in the sense that the basic skills provided to these clienteles had to be directly related to the traditional activities, i.e., the kind of knowledge provided, whether of reading or of basic arithmetic, had to be tied to the kinds of things that they needed to know to improve their production.

To be effective, the functional literacy program had to be realized through the local language. The technological messages that the government sought to transmit to the trainees had to be translated into local languages so that they could become part of the local context.

The realization of these objectives called for the same steps as those taken for the ruralization program at IPN:

- The introduction of literacy programs required environmental studies on the social, economic, and administrative conditions prevailing in the regions, and, because local languages were to be used, it was necessary that these languages be transcribed;
- Literacy programs had to be designed to serve as vehicles for technological transfers, and this required a clear understanding of the most effective signs and words associated with the new technology and ideas; and
- Once the programs had been introduced, the process had to be effectively evaluated to see their effectiveness in transmitting the skills and in modifying the attitudes and work habits, etc. in the sense hoped for.

The magnitude of the investigation work required led the Malians to create a research division within DNAFLA in 1973, the Division de la recherche linguistique appliquée (DRLA). Its objectives were to undertake all linguistic research judged necessary for the transcription of all of Mali's languages for their ultimate utilization both in the formal and in the normal education sectors.

The DRLA appears to have been more successful in its programs than the IPN research division, in part, because of a strong backing from international agencies. For examole, the World Bank has not only provided funding for the environmental studies, for the preparation of literacy programs, for teaching materials, and for the evaluation of the process and the printing and diffusion of the documents, but for a technical assistant as well who was assigned to this unit.

This support has permitted DRLA to do some important work on the transcription of the languages; such work has been done in the main languages. In addition, DRLA has carried out extensive field evaluation of the functional literacy programs. In these field studies, DRLA researchers have found that not only do those involved learn to read but the process seems to influence their work habits and their understanding of the conditions that affect agricultural productivity. In these studies, the acquired arithmetic skills, which permit the peasants to participate in the commercialization of their produce, appear to serve as a motivating factor. Therefore, production rises among those who have gone through such a program.

École normale supérieure (ENS) and the Centre pédagogique supérieur (CPS)

When it was created in 1963, the ENS was principally a teacher-training institute with the following aims:

- To train secondary and normal school teachers;
- To train inspectors for the fundamental cycle;
- To participate in the training of second-cycle, fundamental-level teachers; and
- Through IPN, which was supposed to be transformed into one of its departments, to organize a documentation centre, to carry out research, to carry out in-service training for practicing teachers, and to provide pedagogical materials and documents to both teachers and students.

The distribution of responsibilities between IPN and the ENS was, however, modified by the failure to achieve a merger between them. IPN assumed complete responsibility over the last two objectives, whereas the ENS's responsibility was limited to teacher training. The failure of the merger also led the ENS to integrate its research activities with its teaching units. According to ENS literature its role is to ensure the: "'Malianization' of the teaching staff, in order both to rapidly fill the vacuum created by the departed expatriates and to provide our secondary and normal schools with indigenously and homogeneously trained manpower, to provide the management level of our schools with a high level manpower who is aware of Malian, African, and international realities, to provide researchers to our research institutes. . . ."

The ENS is, therefore, divided along discipline lines into departments where teaching and research are considered as complementary. There are such Départements d'enseignement et de recherche (DER) in philosophy–psycho-pedagogy, mathematics, biology, chemistry–physics, history–geography and arts–linguistics.

In recent years, the ENS has undergone a substantial transformation. It is no longer only a teacher-training institute; it has become an institution of a more general nature. According to Malians, this transformation results from the changes in the labour situation in the country. From its creation, the ENS has trained secondary and normal school teachers, and this appears to have oversatisfied the demand for such teachers. Because of this or because of the

demand for high-level labour in other sectors of the economy and the administration, or because of the prestige associated with jobs in these sectors, more and more of the graduates are being employed outside of the education sector. As a result, the DERs are becoming more and more specialized so that the students are trained not only as teachers but as specialists in their particular discipline. In fact, when looking at the content of the DER programs and the specialization of the staff, one gets the impression that these units function more and more as minifaculties.

The trend away from a strictly pedagogical training program is observed in the research interest of the staff. A survey made by the Direction nationale de l'enseignement supérieur et de la recherche scientifique (DNERS) about the research interest of the professors of the institutions of higher education in Mali showed these to be more related to the disciplines than to pedagogy at the ENS. The distribution of DER professors by field of specialization and research interest clearly shows this trend; it appears that research does not focus on problems related to the teaching of the discipline but to the field itself. This is due in part because most of these professors are working toward a Doctorat d'État in French universities.

This trend is also evident in the graduation theses of the students. A compilation of the theses by disciplines in Table 1 shows that most of these are in the respective disciplines rather than in strictly education-oriented subjects.

Research appears to be relatively structured at the CPS. According to the Director of Research in the Ministry of National Education, it is in this centre that fundamental research takes place. However, just as at ENS, research is discipline oriented and little is done on education-oriented subjects. In fact, CPS is a training institute for higher-education professors. It offers a doctorate comparable to the "troisième cycle" in France. The professors trained are not only those of the ENS, but are also of other higher-education institutions. If fundamental research is taking place at CPS, it is not so much because of the professors' work, but because of the students' required research work.

There are different views about the reasons why IPN and DNAFLA studies on the implementation of Mali's educational reform were not carried out effectively. From the administrator's standpoint, the following have been mentioned:

• There was a lack of qualified researchers. In general, there were very few individuals in the administrative staff with experience in the type of investigations called for in the reform. Most of the staff were practicing teachers who had

Table 1. Distribution by discipline of theses written by ENS students between 1972 and 1979.

	Number of studies	Total (%)
Mathematics	64	8
Linguistics and languages	85	10
Literature	210	25
Philosophy	18	2
Psychopedagogy	105	12
Political science	20	2
Sociology	210	24
History	48	6
Geography	30	4
Economy	64	7
Total	854	100

Source: Grouping by discipline subsection was made by Adama Ba, a former student at ENS; therefore, it reflects his own interpretation of the title of the theses.

never been involved in research activities and who had very limited methodological training. The situation was similar for the members of the ruralization teams. Most of these not only had limited teaching experience because they had just come out of school, but they also had very limited methodological training for the tasks that they were to perform. Indeed this was one of the reasons for the Malian interest, both at the administrative and at the executing levels, in research training;

- There were insufficient financial resources. Because of the limited financial base, Mali has relied principally on external funding for such innovative experiments. Even if the country were able to provide the labour to carry out these investigation activities (the members of the ruralization teams), funds to finance activities such as fieldwork would not be available. The studies actually carried out were, therefore, limited in scope because of this factor.

The reasons why the investigations necessary for the implementation of this reform were not realized may, however, go beyond the lack of qualified researchers and insufficient funding; for example, the members of the ruralization staff mentioned the following reasons:

- There was a lack of commitment on the part of the leadership about the experiment. In spite of all the talk about the importance of the functionalization of education, those who were to actually implement it appeared to resist its realization because of their apparent attachment to the training model they had followed and because they did not want their children involved without the assurance of positive results. This lack of commitment to the experiment resulted, according to these staff members, in indifference toward the conditions for its realization.
- The reform was undertaken mainly by the external aid agencies. Although the objectives were similar to those of the 1962 reforms, it was not the Malians who appeared to be the driving force behind it but international organizations such as the World Bank. The Malians' interest appeared to be dependent upon the financial resources that such projects drew from international agencies. Thus, the administrators' drive to initiate such experiments was motivated more by the drive to attract international funding than by the perceived values of the experiment itself. Consequently, once the funds were obtained there appeared to be a weakening of interest toward the experiments. The director of one of the projects stated that this decreasing interest for the research project could also be explained by the fact that no one was willing to accept research results for fear that they would contradict the bases of the project and, therefore, cast doubts about its soundness.
- The frequent changes of personnel at both institutes were thought to have negatively affected the experiment, because not only may such changes have had a direct bearing upon the commitment toward it but new personnel were naturally unfamiliar with the experiments and had to start at the beginning. This resulted in new directions being taken or in delays, and these tended to discourage even those most committed to the experiment.

The events that have transpired at IPN since 1978 suggest that these last factors may have had an important bearing on the development of research activities at this institute. For example, the methodological problem should have been partially solved by the return of members of the Francophone West African Research Training Programs, but the research unit in which they had to work, which was talked about in 1975, is still not firmly established.

The financial problem should also have been partially resolved by the willingness of the international agencies to fund some of the research activities of these trained individuals, but there has been some resistance from administrators toward such offers. Although the reason for such resistance is not entirely clear, some think that funding of individuals would encourage research motivated principally by intellectual or monetary gains; obviously, this is contrary to the ideology of the Malians on research. Others think that such resistance has nothing to do with ideology; for them, it is just because they do not want to lose control over their activities and subordinates, especially because the kind of research done can produce results that may contradict their expectations. In any case, this situation has tended to discourage those potentially interested in research activities to such a point that many of those who were trained have gone into activities unrelated to research.

As a result, even if there are two units with IPN where studies are to be done for the implementation and review of educational reform activities, nothing appears to be happening. In the words of a former director of IPN, these units, the Bureau d'évaluation and the Centre de recherches pédagogiques, have become increasingly bureaucratized; according to him, improvement in the quality of the staff will have an impact on their activities only when these problems are corrected. Other Malian observers believe that the only hope for the educational research units to function would be to make each independent and to locate them at a higher level within the structure. Although the experience with the CSR and the CNRST does not suggest that this would bring about significant change, the conditions have changed slightly in that the new units have competent researchers, which the previous organizations did not have.

Research activities have, therefore, been very limited both at IPN and at DNAFLA and, to deal with their internal weaknesses, both have tended to rely on external assistance. On the one hand, they have asked graduating students at the ENS to do their graduate theses on pedagogical or sociological topics. On the other hand, international consultants have been invited to carry out baseline studies related to internationally funded studies. Both the ENS students and these consultants have produced a number of research reports on the experiment already described.

The reasons for the inability of ENS to play a major role in the devleopment of educational research in Mali are similar to those stated at IPN and DNAFLA. The following are the most often mentioned:

- The teaching schedule is too heavy. Because of the amount of time spent in teaching and the increasing number of students to supervise, teachers have not had enough time for independent research.
- There is a lack of funding. Because the school has no research budget, the only source of funds comes from international agencies; such funds are, however, hard to come by and even when they are available they are spent on the donor's projects. There have been cases when local agencies, such as IPN and DNAFLA, have contracted some of the professors for studies, but this has been rare.
- Research is not rewarding. The professors of the ENS are, like all other professors and teachers, considered as administration functionaries. Their advancement is, therefore, determined by bureaucrats and has little to do with research activities. Thus, they often prefer spending whatever free time they may have on working for other institutions to supplement their low salaries.

There are other reasons why the ENS has not been a catalyst for the development of educational research in Mali. One of these is its original mandate. As in other countries, the immediate goal in the educational system was to fill the gap left by the Europeans, and the expansion of the educational system to make this possible required a sizable number of teachers, therefore, the principal preoccupation at ENS was to produce such teachers, not research reports.

Another possible reason has to do with the educational status of the professors. Many of them are registered as Doctorat d'État students at French universities; this means that even if they have any research interest, the research they undertake is determined by the institutions where they are enrolled, and it is completed over a long span of time as it is in France.

Structural Relationships Between the Educational Research Institutions

Because all of the research institutions discussed are within the Ministry of National Education, they are structurally related. In a way, they should be complementary to each other. In reality, however, each is independent. Therefore, there is quite a bit of duplication. For example, DRLA is doing experiments in the use of vernacular languages in the schools; the research division of IPN, which is to implement the ruralization program, is actually planning to do the same thing. Not only is there limited working collaboration between the two, but there even appears to be some distrust. The lack of cooperation between these institutions results also in an underutilization of the existing potential research capacity. For example, DNAFLA and IPN are engaged in pedagogical experiments that require extensive investigation work. The ENS, which, theoretically, is supposed to be an important source of labour for such investigations, is, however, only marginally associated with these experiments. Here too, there appears to be a mutual distrust between the potential researchers at ENS and the administrative staff of both IPN and DNAFLA.

The basic cause of this situation is not, however, in the institutions themselves, but in the structural organization of the Ministry of National Education. According to the Ministry's organization charts, all of the research units are horizontally related, with the Minister of National Education as their coordinator, which, as a political appointment, is subject to frequent changes. Therefore, not only is there a problem of continuity in the policies, but the decision to let each head of the individual departments deal directly with this political level means that the opinions of those who may not be on the best of terms with the Minister may be ignored altogether. Interministerial committees have been set up to provide this technical coordination between the departments, but, according to the Malians, these do not correct the structural problem because these committees are too neutral. The members do not often commit their departments; even when they do, the decisions are not necessarily implemented because there is no technical central control mechanism. Therefore, the structural problem that the Malians failed to correct with CNRST is still evident, as are the problems that contributed to its failure.

Independent Research Effort

It is because of the failure to resolve this structural problem that some private research initiatives have emerged. One of the most important of these is the Groupe de recherche action sur l'éducation de base (GRAEB). This group grew out of the World Bank-funded education project. It developed out of the concern that innovation called for in the basic education program will

succeed only if there is a competent research team. The group was, therefore, organized as a way to promote research teamwork. Because its members did not have adequate research training, an in-service research training program was proposed. For this, each member chose a topic of study in the basic education area and the program is tailored along the training needs for these studies.

Because the recognition of the training requires certification, the group has sought to tie itself to a recognized higher-education training institution. Attempts have been made to have CPS accept the members as its doctoral students, but so far this has failed. Although three were accepted after an entrance test, the majority of the members were rejected because they did not meet the admission requirements. Funds provided through the World Bank education project have permitted GRAEB to continue to organize training sessions with resource people invited from within and outside Mali.

Problems Hampering the Development of Educational Research

The activities of the various institutions where some research is carried out suggest that educational research is still in its infancy in Mali. In spite of the place it was accorded in the implementation of the 1962 reforms, the level of activities has been low because of (a) inadequacy in terms of research staff and in the training of available staff, (b) structural problems, and (c) financial problems.

Inadequate research capacity: Tables 2 and 3 show the distribution of the teaching staff by institutions in 1979 and their evolution in higher-education institutions between 1974 and 1980. The first table shows that the staff is made up of about 50% foreigners, and this distribution has not varied significantly over time. It also shows that the number of students enrolled in higher-education institutions has doubled during the same period. This supports the contention by the professors that their inability to do research is due in part to overwork.

Information about the educational background of these professors is not available; however, the minimum requirement for teachers at the ENS is a Doctorat du troisième cycle. It can, therefore, be assumed that they have had some research training.

At the Ministry of National Education, the different institutions reviewed employ about 30 individuals. Their educational background varies from the MA level, obtained by the few individuals who have gone through the West

Table 2. Distribution of the teaching staff of higher-education institutions in 1979.

	Number of DEB*	Maliens		Foreigners	
		Permanent	Part-time	Permanent	Part-time
École normale supérieure	9	58	2	56	—
École nationale d'administration	3	3	16	13	9
École nationale de médecine	3	1	31	1	26
École nationale des ponts et des communications	—	9	2	2	—
Institut polytechnique rural					
Cycle ingénieur	4	13	22	18	—
Cycle technique	4	15	18	18	—
École nationale d'ingénieurs	7	7	21	51	1
École des hautes études juridiques	—	1	10	3	—

*DEB = Diplôme d'enseignement et de recherche.

Source: Ministry of National Education, Bamako.

Table 3. Evolution of the teaching staff in higher-education institutions in Mali.*

Year	Enrollments	Teachers		Total	
		Malians	Foreigners	Teachers	Schools
1969-70	628	—	—	—	4
1970-71	731	—	—	—	5
1971-72	1039	—	—	—	6
1972-73	1473	—	—	—	6
1973-74	1818	—	—	—	6
1974-75	2445	174	153	327	7
1975-76	2984	180	153	333	7
1976-77	3576	188	182	370	7
1977-78	4173	239	184	423	7
1978-79	4756	285	184	469	7
1979-80	5092	277	199	476	7

*Those of CPS are not included.
Source: Ministry of National Education, Bamako.

African Research Training Program at Laval and Stanford Universities, to the secondary level On the whole, these people are lacking knowledge in research methods. Recognition of this fact is the reason why these institutions have insisted on such training. The general opinion in Mali was that the quantitative and the qualitative aspects of the research personnel were an important reason why the research objectives defined at the time of the implementation of the 1962 reforms could not be achieved.

Structural problems of educational research: Research capacity in Mali is not only hampered by the quantitative and qualitative dimensions of the research personnel; structural changes must be made in the administration of research activities. Because of the lack of cooperation between the various institutions, external researchers are invited to do work that could be done internally.

Therefore, the Malians suggest that a new independent research institution be created to take over from these separate institutions. To avoid the problems encountered with the coordination through CNRST, it is also suggested that this be a research institute and not an agency for research coordination.

Insufficient funding: Insufficient financial resources in Mali have prevented even the simplest investigation activities from being carried out. It is, however, recognized that no amount of increase in financial resources will have a significant impact unless the structural problems are corrected. It is felt that one of the reasons for the lack of cooperation between the diverse institutions stems from the problems of control over funding. In fact, it seems even to be difficult for individuals to obtain funding because of this problem.

Research Ideology in Senegal

To study the development of educational research in Senegal, a presentation of the country's ideological position on research in general will be given first. As in Mali, research is viewed in Senegal as an integral component of its development policy. This is evident in the Second Development Plan by the level of resources that were to be invested in it: 1.8% of the gross domestic product (GDP) per year during the life of the plan. It is also evident in the types of research activities considered a priority by the government. As described earlier, Senegal draws most of its revenue from agriculture. The types of research activities given priority are, therefore, those that potentially contribute to

higher productivity in the rural economic sectors. For this reason, emphasis is put on applied research. In 1970, according to the Third Development Plan of the Ministry of Planning, "applied research is considered a priority in that it contributes more specifically to development."

The plan offers some ways to maximize the linkage between research and development objectives. It proposes that the researchers should actually be told what to do their research on: according to the Ministry of Planning, the role of the authorities is "to find for each researcher what he is to do his research on, while leaving each free to find what is to be found."

The desire to link research activities to development objectives is also evident in the policy paper on higher education reforms instituted in 1969. The document says that this reform must aim at integrating the university into the national economic development effort (Camara 1974, p. 15):

> The university must be informed of the research problems faced in the most important enterprises and of the general trends they take; it (the university) holds sometimes the key to these problems and it can orient training and research activities on the basis of these trends. On the other hand, the industries are ill-informed of the existence and the value of some research undertaken in the university.

Integration of the university in the overall development effort was meant as a way to make their research activities responsive to the needs in the economic and social system.

In summary, based on the declaration of intentions found in the official documents, it appears that, as is the case in Mali, the type of research given priority is that which is functional to the social and economic objectives of the country. There appears, however, to be less hostility toward individual and fundamental research in Senegal because according to the Ministry of Planning experience has shown that disinterested research can often produce practical results which were not thought of in the beginning.

The relative openness of Senegal's views on research is probably due to its overall ideological position on economic and social policies; as indicated earlier, such policies are more liberal and, therefore, less inward oriented in Senegal than appears to be the case in Mali.

Structural Organization of Research Activities

Senegal was, before independence, the most important intellectual centre in Francophone Africa; to some extent, it still plays such a role today. Two main reasons have put this country in this position. First, because of its geographical location, the territory was used as a point of entry into what was to become the French colonies of West Africa; as such, the educational infrastructures were developed to train the native labour needed for the colonization process. The famous William Ponty teacher-training school trained most of the postindependence leaders in former French West Africa, whereas the School of Medicine and of Pharmacy of Dakar trained the medical personnel. The concentration of educational institutions obviously led to the emergence of a highly trained local elite, which played a major role in shaping the intellectual debates culminating with the political reforms of the 50s.

Senegal became a major intellectual centre in West Africa for another reason: it attracted a number of French researchers. These researchers came

either with higher-education institutions associated with the University of Dakar, or with branches of French research institutes established in Dakar and elsewhere in the country. These French researchers performed many studies for colonial authorities, mainly in subjects such as ethnology, which were deemed indispensable for the success of the colonization process, or those natural sciences studies considered essential for improvement of agricultural production, which was the basis of the colonial economy. The research activities of these French researchers are in fact the foundation of the research tradition prevailing in most of French West Africa, and the institutions in which they worked form the basis of the research infrastructure in Senegal today.

The diversity of research institutions and the need to generate a coherent research program compatible with the overall aims of the development plans made a coordination of research activities necessary. A commission of research was, therefore, created to work with the planning commissions "to orient, coordinate, and control research activities" (UNESCO 1974).

In spite of its being an intellectual centre for a long period of time, the organization of scientific research is of recent date in Senegal. The need to develop some organization came about at the time of the preparation of the Second Development Plan.

The first attempt to create a permanent research management structure took place as a result of recommendations made in 1965 by a group of the experts from the scientific policy division of the United Nations Economic, Social and Cultural Organization (UNESCO): a "Conseil inter-ministériel de la recherche scientifique et technologique" was created in 1966. Functioning under the authority of the Secretary-General of the President's Office, its mandate was defined as follows (UNESCO 1974, pp. 266–275): (a) to coordinate scientific research activities and basic studies within the country's boundaries; (b) to orient technical and scientific programs within the bounds of the priorities defined by the government for economic and social development; and (c) to take appropriate measures permitting an effective utilization and development of the nation's technical and scientific potential, especially on matters concerning training and recruiting of researchers.

Executive tasks of the Conseil were carried out by the Centre national de planification de la recherche scientifique et technique; this body is an autonomous unit within the secretariat, but it functions under the Direction des affaires scientifiques et techniques. This centre carries out studies and analyses and gathers information needed for the formulation of scientific and technical research policies and for policies for other types of studies.

On the basis of the foregoing information, the structure of research in Senegal appears to be highly centralized. In reality, this is, however, not the case. Because the management of research institutes is in the hands of their respective ministries, the formulation of research policies and their execution is actually carried out autonomously within these ministries. The structural organization of research suggests that Senegal has succeeded in forging a research structure that appears to function: the "Conseil inter-ministériel" does meet, and the executive bodies for the formulation of research policy, such as the "Centre national de planification de la recherche scientifique et technique," do appear to function.

The documentary evidence also shows that Senegal invests a significant amount of its resources in research and development activities. Although the budget invested in research activities fell as a percentage of the gross national

product (GNP) from 1.8% in the Second Four Year Development Plan to 1.2% for the Third Development Plan, this is a significant amount. The magnitude of such investments becomes even more evident when one considers that this figure represents only 30% of the total amount of funds invested in such activities, the remaining 70% coming from external sources, such as bilateral and multilateral aid programs.

The structure of research activities carried out in Senegal can be seen by examining the distribution of the research budget among the various disciplines. According to the Centre national de planification de la recherche scientifique et technique, of all resources invested in research in 1973, 82% went to: agriculture (50%), natural sciences (21%), and health (11%). All of the other research areas received only 18%, distributed as follows: urbanism and regional development, 4%; food industries, 4%; fundamental research, 3%; education and training, 2%; the mining industry, 2%, and another 3% divided among public works, art, culture, information–scientific documentation, and social organization.

The disequilibrium in the distribution of these funds appears to conform to the relative weight that Senegal gives to each of these areas in terms of its economic and social policy. The importance of agriculture as a source of revenue would, therefore, explain the level of resources invested in agricultural research. It is, however, possible that other factors intervene in the allocation of these research funds. The size of the budget allocated to each of these areas may be significantly influenced by (a) the characteristics of the personnel in each of the research units or (b) the source of the funding.

In terms of the personnel, there are more researchers in the physical and natural sciences than in either the applied and social sciences or the exact sciences. Because the research budget allocated to the natural and physical sciences is not as significant as that allocated to the applied sciences, the number of researchers in each area does not appear to be the determining factor for the disequilibrium in the distribution of the research funds among the many areas.

Another possible reason may be the differences in the educational levels achieved among the members of the groups. It can, in fact, be assumed that the higher the level of training of the members of each of the research units, the higher the level of their influence on those who establish the priorities. It appears, however, that this is not a determining factor either, because the number of those with a doctorate is more important in physical and natural sciences than it is in applied sciences.

If the number of researchers per institution or the level of their training is not the determining factor for the importance given to applied sciences in the distribution of research funds, the reason may perhaps be found in the composition of the research staff in terms of nationality or of the origin of research funds. According to the Centre national de planification de la recherche scientifique et technique, an analysis of the distribution of the total research budget in 1973 by source of funding and by item funded shows that 59.3% of this budget came from France; Senegal came in second with 24.64% and the United Nations Development Programme (UNDP) came in third position with 9.47%.

Classification of the distribution of the funding from the various sources by type of activity funded shows the importance of external funding in the total budget. France provided the principal funding for a wide range of activities: 49% for agriculture, 72% for education and training, 86% for social organization, and 98% for urbanism and regional development. Senegal's contribution was

most significant in art and culture (92%), food industries (42%), agriculture (35%), and education and training (23%). Among the other contributors, UNDP is the most important with 11% in agriculture, 57% in food industries, and 100% of all the funds in the mining industries research.

These data show that the research funds in Senegal come principally from external sources and that among external funders there is a preference for production-related activities. It is possible, therefore, that Senegal's decision to invest more heavily in agricultural research is in response to the preferences of the external funders. This is feasible because external funding often requires internal matching funds.

But why do external research funders concentrate their efforts in research activities related to the primary sector? Two hypotheses are plausible: either the external funders act in response to the need to improve production in this sector, which, as noted earlier, is vital to the economic well-being of Senegal, or they do so to fulfill the investment objectives of international groups in their countries.

Because the data do not clearly show which of these hypotheses is the most plausible, another way to explore the issue is through the composition of the research staff in the institutions. Again, according to the Centre national de planification de la recherche scientifique et technique, in 1973, the distribution of the research staff by nationality and by discipline shows that, on the whole, the research staff was still very French at the time of the survey. Out of a total of 376 researchers, 248, or 66%, were of French nationality. When the remaining non-Senegalese were added to these, the total number of expatriate researchers was 300 or 80%.

The distribution of the expatriates by fields shows agriculture to have the highest concentration. For the Senegalese, however, the highest concentration is in medicine; this is difficult to understand because Senegal invests 84% of its research budget in agricultural research but the medical schools were the first professional schools to be organized. The data suggest, therefore, that the level of funding in agricultural research by Senegal is probably influenced by the matching fund rule of international funding agencies. It would also appear, therefore, that the focus on research in the primary sectors responds, in part, to the ideologies of the funding agencies themselves.

What underlies these ideologies? Is it a genuine need to generate information about the local environments to help the producers improve their agricultural techniques or does such an interest in the primary sectors reflect only the concerns of the international companies? The data do not permit a clear response to such questions. On the basis of perceptions obtained from some of the researchers, there is a strong suspicion that the expansion policies of the international companies have a strong influence on the type of research activities that are undertaken in Senegal. For example, one research group in Senegal is merely the prospecting arm of the French mining industries, whose activities are scattered around the world.

Of course, it is also possible that the orientation of research activities does not respond to any specific research policy. Many of the researchers are working for higher diplomas, and their research is intended more for such studies than for anything else. If, indeed, such people do significantly influence the decision to focus activities on agricultural research, then the data do not give a clear indication about whatever the official research policy may be or whether there is any such thing in the first place.

Whatever the case, the data indicate that the bias in favour of agriculture and related subjects in the distribution of research funds is affected by some external influences. Thus, in spite of the fact that the Senegalese have seen such bias as problematic, the structure has remained basically unaltered. Recommendations were made in 1973 to modify slightly the distribution by reducing the amount allocated to agricultural research and slightly increasing the amount for the social sciences. Although this is not clearly indicated in the documents, among the reasons for these recommendations was the realization that the extension of the results of agriculture required a better understanding of the value of these results in terms of the producers' daily activities and that such an understanding could be raised only if the basic education level of the population were raised to a functional level, compatible with the social and production objectives, and if more were known about the economic and sociological factors that influence the attitudes toward economic and social change. This is the reasoning behind the educational reforms of the late 60s. In essence, however, there has been no significant change in the structure of research in Senegal and in the ideology that underlies its organization and, consequently, the distribution of research funds.

Development of Educational Research

Evidently, social and education research is the last of the government's priorities, both in terms of the total funding committed to it and in the number of researchers assigned to it. This has been explained through the following arguments: (a) the monocultural nature of the Senegalese economy leads the government of Senegal to invest a larger share of its resources in agriculture, which is its main source of revenue, instead of investing in the educational sector, and (b) a strong dependence in Senegal on external resources, especially on France, brings in not only most of the funds invested in research but also most of the researchers, and this directs Senegal's research policies toward the activities favoured by French researchers and investors.

But even if these are the determining causes for the lack of interest in social and education research, are they the only ones? In fact, there appears to be a contradiction between this lack of interest in education research and the importance that the Senegalese government gives to education. As shown earlier, one of the government's principal educational goals is to reduce illiteracy to improve production with new technologies. Because of this, education absorbs about 20% per year of the government's total expenditures. It is difficult, therefore, to understand why there is only a limited interest in evaluating the various attempts to reform education or to undertake the studies that might lead to the discovery of more effective educational methods, both to make the learning process more effective and to increase the efficiency of the school system.

The information provided in the preceding presentation shows that educational research is carried out in the following organizations: Institut national d'études et d'action pour le développement de l'éducation, recently created by the Research and Planning Directorate in the Ministry of National Education; the Institut de recherche sur l'enseignement de la mathématique, de la physique et de la technologie, created by the University Polytechnic Institute; and the Centre de recherche de l'École normale supérieure. (The data used in determining the weight given to the different research areas came from the information furnished by such organizations.)

When the meaning of research is taken loosely to include research management and planning activities carried out by ministerial departments, the list of research organizations extends to the directorates in the Ministries of National Education and of Higher Education, where such activities take place, as well as to the State Secretariat for Human Promotion.

The description of the activities of these various organizations will determine whether or not the exclusion of the activities of the ministerial departments from the accounting of funds invested in educational research underrates the educational research effort in Senegal.

Direction nationale de la recherche et de la planification (DRP)/Direction nationale des études et de la planification (DEP)

As elsewhere, these directorates are the information management departments for the Ministry of National Education and the Ministry of Higher Education. According to the DEP, because they serve as technical agencies advising the government on educational policies, they are required to compile statistics, analyze them, and propose policy elements for consideration by the decision-makers at the higher levels.

Both directorates have been unsuccessful in the exploitation of the information they have collected; however, some studies have been done and some relevant policy information has been produced with such data. For example, DEP has done an interesting study in which an attempt has been made to relate the demand for high-level labour in the Senegalese economy and in public administration to the capacity of the University of Dakar to provide such labour. It has been shown that not only the University may produce more graduates than may be required by the economic system and public administration in the coming years but, at their present rate of expansion, it appears to be producing graduates in fields where employment possibilities have already been exhausted. The study has, therefore, cast doubts on the effectiveness of the higher education reforms of 1969.

According to the staff members of these directorates, success in the exploitation of the data they collect has been limited because of the following problems:

- Inadequate personnel, both in terms of numbers and in terms of methodological training, are currently assigned to these units. Both DEP and DRP are organized in the same way as all other units in the Senegalese administration. As such, their requirements in personnel are determined by bureaucratic needs, not research needs. Therefore, the number of people assigned to these units does not meet the requirements of the tasks they are asked to undertake. The bureaucratization of the work in these units also affects the process of selection of the people assigned there. Thus, one of the problems is that the personnel are generally lacking in research training methods. In spite of the fact that Senegal has one of the best-trained, high-level managerial groups, these units have consistently depended on technical assistance for the realization of their studies.

- There is resistance from other sectors within the structure to the acceptance of the results of studies produced in these units. Both DEP and DRP work with other education-related departments and with the Ministry of Planning for the proposal of coherent operational policies within their respective domains. This means that the studies, on the basis of which the proposed policies are based, have to be known and accepted by these other departments.

This is, however, a problem in cases where the results of these studies contrast or cast doubt on the effectiveness of the decisions taken by these other departments. In such cases, these other departments try to discredit such studies.

Resistance to the acceptance of the results of the studies from these units is encouraged because of the educational attainment and the professional levels of those who work in these units. In general, these are young cadres at the beginning of their professional careers; in most cases, they have just received their first university degree. Because they must compete with those in higher positions than they are within the structure or with individuals who are technical assistants and, therefore, may be closer to the centres of decision-making than themselves and because the results of such studies sometimes cast doubts on their professional judgments, DEP and DRP researchers' abilities to influence the views of others are reduced. Thus, it is increasingly believed that such units should have well-qualified personnel to offset their lower professional position.

- There is also inadequate material support for both departments. As noted earlier, DEP and DRP are not considered research units; therefore, they are given only the most essential equipment required for routine administrative functioning.

The two directorates also face a structural problem. Because each is specialized to a particular level, they tend to work in a parallel fashion. Coordination of their activities is called for in the general framework of the educational organization in Senegal; however, in reality, there is no coordination of the two directorates and neither one appears to know what the other is doing. The overall consequence is a weaker voice in education matters.

Institut national d'études et d'action pour le développement de l'éducation (INEADE)

The INEADE was created in 1981 to carry out pedagogical experimentation and to train personnel for the school system. Its creation came out of the need to have a specialized institution to carry out educational studies without the administrative constraints under which DRP functions in the Ministry of National Education. Although it is under the authority of the Minister of National Education, technically it functions under DRP.

Specifically, INEADE is meant to fulfill the realization of the educational reform of 1969. Therefore, it must:

- Carry out research and experimentation on new teaching methods for the formal and nonformal education sectors;
- Prepare new pedagogical instruments, materials, and books for all levels of the school system;
- Animate and coordinate all actions pertaining to school and extraschool training;
- Define new types of examinations to determine the acquisition levels at the different levels of the school system;
- Define and prepare new curricula:
- Evaluate the results of these examinations to improve the productivity of the school system; and
- Improve the existing structures and propose new ones to have a better link between the education system and the economic and social development objectives.

Organized in the same mode as the IPN in Mali, INEADE's policies are established by a committee presided over by the Minister of National Education

and composed of representatives of all other departments and institutions concerned with educational matters. Although it is still difficult to see how its policies will be oriented, it appears that INEADE follows the same tradition as other educational institutions in West Africa: it is a pedagogical institute interested strictly in the pedagogical aspects of the school process. There seems to be no interest in linking these aspects to the social setting.

The creation of INEADE should also have corrected the structural problem concerning the relation between the activities of DRP and DEP. This is, however, not the case. It is assumed that research relating to higher education is to take place in higher education institutions such as the ENS. Therefore, INEADE's field of activities has been limited to the primary and secondary levels. Also, INEADE has begun to face problems of acceptability by other institutions interested in educational research and policy formulation. The source of this problem has to do with the fact that it was created under the initiative of DRP, which itself responded to the need to create a working structure for the educational researchers being trained abroad (principally through the West African Research Training Program) to carry out evaluative studies for Senegal's educational reform. It is funded principally through World Bank support. Because of this the institute is perceived as being a foreign element in the education system, as is the case with all other such institutions not created with French help. According to INEADE's staff, however, the institute's relations with these other institutions will improve once it begins to produce results.

State Secretariat for Human Promotion

In the State Secretariat for Human Promotion there are a number of departments that are not research oriented in the same sense as DRP and DEP, but some experimentation in nonformal education programs is carried out. One of these departments is the Enseignement moyen pratique (EMP).

This department is supposed to organize practical training programs for young rural people who have not had a chance to go to school, and for the urban youths who have done so but whose training does not lead to their effective employment. The aim of this program is not so much to train these young people in a specific field but to lead them to develop positive attitudes toward manual work in general and agricultural work in particular.

Such an intervention implies a sort of action research. Normally, this should be complementary to similar actions undertaken within the Ministry of National Education and that DRP is supposed to evaluate. In reality, however, there is no cooperation between these departments and those of the Ministries of National Education and of Higher Education. Many of these departments' functions are contested by these ministries because of their unconventional nature.

The objectives of INEADE suggest that some of the activities assigned in the past to the Secretariat will be taken over by it. Based on the rivalry that exists between such institutions, it is unlikely that this will be easily achieved. The State Secretariat for Human Promotion already has a strong bureaucracy, as do other ministries. Obviously, this bureaucracy legitimizes its existence through the mandate that the department received at its creation, which is now questioned by the creation of INEADE. Even though the Director of EMP is a member of INEADE's policy committee, it is unlikely that EMP will easily part with the actions making up its original mandate.

Institut de recherche sur l'enseignement de la mathématique, de la physique et de la technologie (IREM)

The IREM is one of the University of Dakar's autonomous research institutes. It was created (a) to do research and realize pedagogical experiments in the teaching of mathematics, physics, and technology at the primary and secondary levels; (b) to help in the training of primary and secondary school teachers; (c) to organize a recurrent training program for in-service teachers; and (d) to prepare and disseminate pertinent documents on the teaching of these subjects.

As such, the institute is meant to assist the ENS where future teachers are effectively trained. However, the institute functions independently from ENS. Not only does it have its own researchers, it also has its own part-time teachers for its training programs. The activities of the institute appear to duplicate those of the ENS. In fact, the research centre of the ENS has the same objectives as those of the institute.

A comparison of the institute's aims with those of the recently created INEADE also shows that both have the same objectives and the same organizational structures to achieve them. No one knows how their respective responsibilities will be divided. In the past, the division of such responsibilities has been done on the basis of the type of research to be realized: the university-based research centres have been expected to carry out fundamental research, whereas applied research is expected to be done in centres outside of the university. This, as noted earlier, is not, however, the current policy. Although there is no denying the potential benefits from fundamental research, the policy since the early 60s has been to encourage the university to make applied research a priority.

The director of the institute is on the policy committee of INEADE. It is, however, doubtful whether or not such representation will solve the basic problem. Unless their respective roles are clearly defined, a certain level of conflict is to be expected.

Centre de recherche de l'École normale supérieure (CRENS)

The Centre was created in 1964 to provide technical support to ENS for its training of teachers and administrative cadres for the school system. Its overall mandate is to define and propose pedagogical methods and organizational structures to make the school system more efficient. To achieve this objective, it is to promote the introduction in the school system of new dynamic pedagogical methods, drawing from the experience of teachers and students. These methods are to be experimented with at the primary and secondary level.

The other mandates of the Centre are to promote the development of pedagogical research by studying themes that respond to the needs of ENS and of the country to promote the Africanization of the curricula at the primary and secondary levels. In this respect, the Centre is said to have contributed to the introduction of new curricula and teaching materials in geography and history. The Centre has also played a major role in the development of a math curriculum.

Structural Relations Between the Educational Research Centres and Educational Research Management Units

In theory, educational research centres and management units are related because they all fall under the jurisdiction of both education-related ministries; i.e., the Ministries of National Education and Higher Education.

In theory, because educational policy is determined by economic development objectives, educational research policy is equally intrinsically tied to these

objectives. Broad economic and social objectives of these policies are set by the Conseil économique et social; the research objectives for the realization of the economic and social objectives are identified by the Conseil inter-ministériel de la recherche scientifique et technologique with the help of the respective "commissions techniques." The State Secretariat for Scientific Research determines the means for the realization of these objectives, ensures that research themes are in accord with development objectives, and coordinates the activities of the education research organizations and those in other fields. DRP and DEP are the research management units for both ministries; some studies are done in these units but these studies mainly produce policy papers on the basis of which legislations or analyses of data for planning purposes are prepared. In theory, the work of these units is harmonized through the interministerial committee; in reality, however, both work in a parallel way.

Because DRP and DEP are principally management units, educational research was, in the past, supposed to be carried out mainly at the University. Thus, CRENS and other centres have done pedagogical experimental work in various respective areas, at the primary and secondary levels, which are under the jurisdiction of the Ministry of National Education. The creation of INEADE may, however, change that, because such experimentation is now supposed to take place at this institute.

The functional relationship between these various structural levels is clear. The picture is, however, not so clear in reality. The kind of dialogue and coordination that is necessary to have a coherent research policy has not taken place. This is because communication between the levels where research activities are carried on actually takes place in a "U" formation, i.e., information about the activities taking place in each of these units is relayed to other levels via higher authorities. The problem with this is that not only is a significant amount of information lost in the process, but higher authorities transmit to their subordinates only what is "safe," which means that, in fact, neither of these units appears to be fully aware of what is taking place in the other. The bureaucratization of the research structure is responsible for this situation in a significant way. But the absence of interaction between these units can also be explained in terms of the characteristics of their personnel and the place accorded to educational research in general. As noted earlier, the type of personnel existing in these units may define the interaction that takes place, and the level of resources invested in educational research determines the type of personnel involved in it.

Independent Research Effort

There appear to be no organized independent research activities in Senegal, unless the work done by individuals seeking advanced degrees is considered as such. The reasons why this has not developed can be summarized as follows: (a) lack of independent financial resources, (b) insufficient demands for educational research, and (c) inadequate experience in research organization.

There are some independent research funds, especially in evaluative activities, so some Senegalese have indeed done such work for organizations such as the International Labour Organisation (ILO) and UNESCO. But, in general, the insufficient demand for educational research has been caused by the failure of the research community to convince decision-makers about the necessity of such activity for the success of educational policies. It has been indicated, for example, that the various attempts to reform the educational system have not

succeeded because of failure to investigate basic work required to design educational experiments and because of failure to evaluate the experiments once they have been introduced. In the absence of such work, decisions about the educational system are based on intuition. This is the case for recent "États généraux" during which such experiments have been declared failures. It appears, therefore, that independent research groups have not developed because of the lack of research entrepreneurship. Lack of research entrepreneurship can be attributed to a number of factors, among which the most important may be the lack of commitment to research as an activity essential for social and professional mobility. This lack of commitment may be related to the level of research training.

Some independent research on the Senegalese educational system has been produced. In addition to UNESCO's Bureau régional pour l'éducation en Afrique (BREDA), which has either produced or supported educational surveys for different funding agencies such as the World Bank and UNDP, the UN's environmental research unit (ENDA) has done some studies on the characteristics of the primary and secondary schools in Dakar. This work has been done with the assistance of Senegalese research workers. French groups, such as the Institut de recherche et de formation-éducation et développement (IRFED), have been heavily involved in the activities of the State Secretariat for Human Promotion, especially in the action research type of effort at EMP.

Problems Hampering the Development of Educational Research

The presentation of the state of educational research in Senegal has shown that, as in the case of Mali, educational research in this country has not developed at the same rate as the development of the modern educational system. The reasons for this are basically similar: (a) the personnel assigned to educational research institutions and units appear to be inadequate both in terms of numbers and in terms of methodological training; (b) although the educational research network appears to be better structured in Senegal than in Mali, there are similar problems faced in research coordination; (c) most of the funds available for research are invested in natural sciences and applied research; and (d) in spite of the image promoted in the documents about the importance attached to education, in reality, it is lower in the list of priorities.

Inadequate educational research personnel and insufficient training in research methodology: It has already been shown that, when taken as a group, the social and human sciences are the least endowed in research personnel (only 14% of the total number of researchers were studying subjects in these areas in 1973). According to the State Secretariat for Scientific Research, although suggestions have been made to modify the structure of this distribution, the situation has not changed significantly.

The situation has, however, changed in terms of the national origin of the researchers. In 1975, for example, only 35% of the entire teaching staff at the University of Dakar, which contributes the most important group to the total number of researchers in Senegal, were of Senegalese nationality. Within the professional institutes, such as ENS, only 11% on average were Senegalese. Even when other non-Senegalese Africans are included, the Africans on the teaching staff totaled only 33.3%. At ENS, however, about 60% of the teaching staff was Senegalese in 1981 (Table 4). Although the percentage is lower in other departments, improvement appears to have been made in the "Senegalization" of the teaching staff at the University of Dakar. The rate of Senegalization is

Table 4. Distribution of the teaching staff at ENS by nationality

	Senegalese		Non-Senegalese			Total staff
	Number	%	French	Belgian	Other	
Math	6	55	2	2	1	11
Physics	5	50	1	4	—	10
Natural sciences	4	44	3	1	1	9
Philosophy	1	33	2	—	—	3
Letters	0	0	1	—	—	1
Modern French	2	40	3	—	—	5
History/geography	5	71	1	—	1	7
English	5	71	—	—	2	7
Spanish	2	100	—	—	—	2
German	0	0	—	—	1	1
Portuguese	1	50	—	—	1	2
Arabic	4	100	—	—	—	4
Microcomputing	3	100	—	—	—	3
Psychopedagogy	11	61	4	3	—	18
Total	49	59	17	10	7	83

Source: ENS, 1981.

even higher in the ministerial research or planning units; although there are still a number of technical assistants in many of them, the number of Senegalese in positions of influence has increased significantly since the beginning of the 70s.

Improvement has also been made in the academic level of the teaching staff. In 1973, about 40% of the higher-education teachers in the social and human sciences had a doctorate of some sort; when those with a "doctorat de troisième cycle," which is basically a professional diploma, are removed from this group, the number of those with established research training falls to about 21%. The data do not give the percentage of Senegalese by level of education, but if extrapolated on the basis of the distribution of the researchers by nationality, it would seem that the majority had lower educational attainments than their expatriate counterparts. This appears, however, to have changed slightly in recent years; the rise in the number of teachers in higher-education institutions has been accompanied by a corresponding rise in the average educational level attained by the Senegalese members of the teaching staff. At ENS, for instance, the number of those with a doctorat de troisième cycle is about 80%. This also suggests that although the average educational level was lower in the social human sciences in 1973, the increase in the number of Senegalese in teaching positions would appear to have raised this level in recent years.

The rise in the level of educational attainment, however, does not appear to have had an impact on the level of activity in educational research for several reasons. First, the research personnel, even when research is their principal activity, are civil servants. This has tended to bureaucratize the research process, which in turn has removed the motivation to engage in research activities. Because research plays only a minor role in their upward professional and social mobility, the researchers tend to obey the bureaucratic rule for such mobility.

Another reason often cited is that the professors at the University are overworked. Because of the increased enrollments, class sizes have grown significantly. This does not, however, appear to be supported by the data. According to the 1973 survey referred to earlier, the researchers spend more of their time doing research (68.6%) than teaching (14.4%) or other tasks. Because the work-

load has not significantly changed in recent years, overwork is probably still not a major factor in the decision not to do research.

Indeed, the principal reason may well be the training factor already described. Several elements are at play in the training programs that these teachers have followed and that may reduce the research training component to a minimum. First, the European education system, through which most of the teachers have been trained, tends to emphasize a general training and leaves the decision to the students as to what is useful for their particular needs and those of their environment. What actually happens is that professional training is delayed and acquired on the job. Such a system may produce results only when the environment in which the former students work permits them such training; in Africa, this is difficult because the young researchers are left to themselves. It would appear, therefore, that if educational research is not carried out in Senegal, it is in part because there are as yet no educational researchers. Those who are aware of the need to study educational subjects, but whose experience does not allow them to function autonomously, tend to abandon ultimately any desire to do so in the absence of even the minimum of professional guidance.

A second element has to do with the kind of research to which they are exposed. As seen in the description of the educational experiments introduced in the system, the kind of research that these experiments call for is empirical which permits an effective determination of the impact of the changes introduced in the system to make the education system more efficient. The training that most of them have received has, however, tended to limit research training to philosophical and ideological discussions. Most members of the research staff do not, therefore, have adequate training in empirical research.

Also, there is no educational research training program in Senegal. In fact, the training in education is limited mainly to training teachers. As in Mali, the teaching units at ENS, like those in other departments of the University, are organized to carry out both teacher-training responsibilities and research. This means that, in addition to the professional capabilities relevant to their fields of study, the students are supposed to be exposed to the research methodology pertinent to their field. In reality, however, not only are educational programs restricted to pedagogical training, but the training process does not involve research training. The students receive their basic training in a given field and then go to ENS to acquire teaching methods for those particular fields. Although there may be courses in research methodologies, these are designed mainly to arouse the students' curiosity.

As elsewhere, research training is supposed to take place at the graduate level. There are, however, no such programs in education in Senegal. There is an MA program in "sciences de l'éducation," but this is a general program without clear objectives. It does not seem to be intended to lead the students toward specific aspects of education; rather, it merely presents a number of subjects related to the various ways of studying education. Students write a graduate thesis, but such theses have tended to be philosophical. The ENS has a doctorat de troisième cycle program arrangement with the University of Toulouse in France. Based on this arrangement, the French university offers courses to Senegalese students by correspondence; the ENS's only role is to serve as a supporting institution for such students. Obviously, this formula has several disadvantages: not only is the supervision of students difficult but the training itself tends to be superficial. Moreover, it tends to turn the students' interests toward those of their distant French supervisors. It is amazing, in

fact, that this kind of arrangement would be accepted in a university such as Dakar, which is one of the oldest in Francophone Africa. This is, however, understandable because it seems that the pressure to have such a program is due more to the search for certification required for upward mobility in the bureaucratic public administration than for the training itself. This is of course true elsewhere.

There is no clear indication about the emergence of a local graduate training program. According to some Senegalese, the difficulty is, in part, due to the rivalry between ENS and the other faculties at the University. As in other Francophone universities, ENS is deprived of the status of a faculty, which would normally enlarge its mandate beyond simple technical teacher training. In Senegal, the drive to reduce its importance explains why IREM duplicates some of the training programs that normally should take place at ENS.

Within the faculties, such graduate training programs in education should be located in the Faculty of Arts and Human Sciences. However, the programs in this faculty are geared principally toward the arts and languages, so that even when education is studied, the themes studied are drawn from the latter. There is some talk of encouraging the creation of such a program in this faculty, but reliance on French universities for such training discourages its serious consideration.

The absence of a local graduate training program in education contributes to the absence of educational research in other ways. First, as seen in Mali, students are the most important producers of studies in education. The absence of an effective training program in educational research deprives Senegal of the different studies that such programs would normally produce. Second, as in the case of Mali, the majority of the Senegalese teachers at the University of Dakar hold a doctorat de troisième cycle. Because this is not a sufficient condition of professorship, most are registered in French universities as students for a Doctorat d'État. The Doctorat d'État program, however, takes a long time to complete (principally because it functions as a correspondence study program), and the subjects studied are determined on the basis of the interests and the orientation of their French supervisors. This means that not only may the subjects studied have no relevance to the current educational problems in Senegal, but these teachers cannot participate in or initiate any other research project during this long period.

Neither of these two factors is solely responsible for the low level of participation in educational research by the Senegalese. However, based on its overall impact, the training problem is certainly among the most important.

Structure of educational research: The structure of research organizations appears to be better in Senegal than in Mali. The formulation and the implementation of research policies take place in a set of permanent commissions and institutions. On the surface, this indicates that there is a better coordination of research activities in Senegal than in Mali; it also indicates that the research policies are better articulated there. In essence, however, this is not the case.

As noted earlier, educational policies are biased in favour of the natural and applied sciences. This was seen through the number of institutions dealing with nonsocial sciences and education matters; it was also seen in the distribution of the available funds for research. Although it may be thought that this results from the importance of the external input into these funds and from the importance of the expatriate personnel doing nonsocial sciences or education research,

it is also true that the Senegalese research policy is biased in favour of natural and applied sciences — 85% of the total domestic funds are invested in these areas. This bias may be explained by the importance of the primary sectors, especially agriculture, in the economy. However, because education is recognized as an important variable without which the popularization of the information generated through the applied sciences obtained locally or overseas, is not possible, it can only play such a role if the processes through which it operates are better understood. But it would appear that the Senegalese research policy reflects more the view of the external funders than its own internal development needs. Even if external funders react to the interests of the Senegalese, the level of importance that the Senegalese attach to education means that the process need not be circular.

Another structural problem that hampers educational research in Senegal relates to the distribution of responsibilities between the various education-oriented research units. Between the university-based and the ministerial planning and research management units, the distribution of responsibilities is clear. There is a more apparent willingness to use human resources at the University in Senegal than in Mali. However, there is an overlapping in the responsibilities in some cases and a total lack of cooperation between the various institutions. Among the ministerial departments, the mode of operation is parallel; each of the institutions is insulated within its territory to such a point that even though their work must be complementary for the policies that they produce to be coherent, there is only a very limited circulation of information. A similar situation prevails in the relations between the university-based research centres resulting in a duplication of efforts.

This suggests that (a) in spite of its apparently well-defined research structure, Senegal has not necessarily succeeded yet in forging a domestic research policy in general and an educational research policy in particular and (b) has not succeeded in coordinating the activities of the various research institutions, especially those concerning educational research.

These structural deficiencies have weakened the position of educational research. This weakness is probably the reason why the educational sector is unable to attract the level of funding required to do the studies to convince the authorities about the usefulness of investments in educational research.

Insufficient funding: The structural bias in favour of agriculture and the natural sciences research has obviously tended to concentrate the funding in these sectors. Although suggestions have been made to modify the distribution of Senegal's own available funds to increase the share of social sciences and educational research, the structure has remained basically unchanged. Some of the Senegalese used as informants in this study contend that this bias is the major reason preventing the development of educational research in Senegal.

This is partially true, too much importance is also attached to funding. Many small-scale studies could actually have been carried out by the personnel assigned to the research units. These researchers have the performance of such studies as their principal task and have some equipment to assist them and, as seen in the study of the university graduates at DEP, this is possible. Therefore, inaction may not be due entirely to the funding problem. Part of the explanation has to do with the prevailing attitudes toward research both within these units and in the system in general and the fact that there are no incentives to encourage research studies.

Increasing Educational Research Capacity in Francophone Africa

The analysis of educational research in Mali and Senegal has shown a number of factors that may have hampered the development of educational research in these countries. The most important of these are: (a) structural problems, (b) lack of financial resources, (c) ideological problems, (d) personality conflicts, and (e) inadequate training in research methodologies.

Of these factors, the inadequate training is the most important. Structural problems may be hampering communications between the various institutions and policymaking levels, inadequate or lack of financial resources may be limiting or preventing research activities, and the rejection of research results, because of ideological or personality conflicts, may be discouraging practicing researchers. However, if these problems are difficult to overcome, it is because they are strongly related to the training factor.

Qualitatively, inadequate theoretical and methodological training results in the production of low-quality research results; because such results are often unconvincing, researchers are unable to establish themselves and their abilities to communicate, attract financial and material resources, and make their views accepted by colleagues of other ideological persuasions or by their superiors are greatly reduced. But even when the researchers are well trained, their level of education can still affect their opportunity to do research. It is well known that prestige is an important element in communicating with colleagues or in having one's views accepted, as well as in attracting financial and material resources. Such prestige is, however, often determined not by the quality of the training, but by the level of education attained.

None of the various problems faced by researchers in Mali and Senegal will be resolved unless the training variable is dealt with. Therefore, an increase in educational research capacity in Francophone Africa will have to involve an upgrading of the training level.

The Research Training Problem in Francophone Africa

Because one of the prevailing complaints made about the development of the educational systems in Africa is their apparent overexpansion, the question is, why is there a researcher training problem? The problem derives from two probable causes: the limitation of the study of education to teacher training and the absence of graduate programs in education.

The decision to limit the study of education to teacher training can be attributed to the prominence given to the educational variable at the time of independence. First, the expansion of education was necessary to fill the vacancies left by the Europeans, and, second, education was considered as an important promoter of the social transformation necessary for economic and social developments to be set in motion. Therefore, in both study cases there is an overriding concern for the expansion of the education system, a very limited concern for the quality of the product of the school system, and a need to increase the capacity to deliver education. Because it is assumed that school plants could be provided through self-reliance policies at the local levels, the state's main task is to produce teachers.

The lack of concern over the quality of the graduates, in terms of the needs of the social system, however, appears to have reduced the training of teachers

to a routine and mechanical process. Because the training methods used are those already discovered in Europe and elsewhere, no attempt is being made to look at their efficacy. Questions may be raised occasionally about this, but only when the financial constraints make the continued expansion of the school system impossible.

It is, therefore, not so much the limitation of the study of education to simple teacher training that has hampered the development of educational research in these countries, but the apparent belief that increase in the capacity to deliver education is the ultimate solution to the social and economic problems. This belief has blinded the system in such a way that the need to improve the efficiency of the educational system has been almost completely eclipsed.

The need to study the education process has been discouraged by another factor: cultural extraversion. In the case of both Mali and Senegal the very fact that the education system transplanted in the former colonies is a foreign structure should make Africans want to study the processes to encourage educational forms that may be more compatible with the local cultural and technical situation. The necessity to introduce innovations in these countries is recognized, especially during periods of crisis. However, such innovations have been difficult to implement because the systems in both countries are too dependent on the former "metropole," i.e., colonial power. Because the viability of any transformation is seen only when it does not deviate from the French model, the tendency has been to wait until changes are implemented in France before any local attempts are made. It is said, for example, that the reform of higher education in both countries, but especially in Senegal, was significantly influenced by the 1968 student revolt in France. Moreover, because policies in the former colonies are controlled by former colonial cadres, who often are advisers in policymaking bodies in the former colonies, or by local elites, who are tied to the training model, the introduction of innovation in France does not guarantee that such changes would also be introduced in the former colonies. Because of this, the education system in Africa is conservative, resisting even the cosmetic changes taking place in the parent system.

This dependence also means that even when innovations are introduced in these countries, it is because they are believed to have produced good results in France or because they are introduced by representatives of international agencies or of foreign governments. If there is no indigenous motivation to study the educational process in these countries, it is because this cultural dependence makes it unnecessary; it is considered unnecessary to do such studies when they have already been done elsewhere. Even when they are carried out, they must not deviate from the dominant model; deviation usually results in the ultimate rejection of the researchers' results and of their suggested policies.

This dependence problem is aggravated by the absence of graduate training programs in education, and this strongly limits the development of research. The lack of local graduate training programs in turn aggravates the cultural dependence problem because it means a continuing reliance on the former metropole for such training. As stated earlier, people trained in such metropole programs tend to resist any innovations in the local educational systems that deviate from the training model that produced them. This leads people to consider education as a routine process involving a simple transplanting of experiments made elsewhere without due consideration of the local physical and sociological context. The result is that even when local research is done, its

design and process are conditioned by the need of its acceptance by peers in the countries of training. This fear of rejection is a major reason why potential researchers become discouraged and unmotivated.

Another problem is that the reliance on the former metropole for such training influences the training priorities in the receiving countries. Who decides that it is more important to produce agricultural engineers than educationalists or social scientists who must devise ways to transmit the new technologies to the producers? Who decides that agricultural research is more important than educational research? Consciously or unconsciously, such decisions are made by those who organize the training programs. In both cases, but especially in Senegal, their educational and research priorities are established more on the requirements of the former metropole's economic and political interests than of the local needs. The attention given to agricultural education and research in both countries probably reflects the aims of the multinational companies involved in the production more than local ones. Evidence of this in both countries can be seen in the trend toward a progressive abandonment of locally consumed products in favour of the export crops controlled and marketed by international companies. Variables such as education or social sciences, which are considered to have only a marginal or sometimes even a negative impact on the earning of these companies, are at the bottom of the list of priorities. Thus, in spite of the importance attributed to education for economic development and in spite of the many attempts to reform the educational systems, neither the training of research workers, who are to do the basic work needed to improve the efficiency of the education process, nor the actual research work are judged a priority.

The absence of local educational graduate training programs also tends to limit the development of educational research in other ways. First, in the case of Mali, because of the absence of a functioning research group, whatever research taking place comes mainly from student work. Based on the volume of such work, graduate theses in Mali have been a major source of the limited data available on the evolution of the educational system. Such work is, however, of limited scope and quality because of the level of training of the students who produce it.

Second, it is well recognized that the cost of education abroad limits the number of students who can be admitted to graduate programs. Reliance on overseas training programs, therefore, limits the size of the group to be trained. In both cases studied, however, the size of such a group is of cardinal importance in the development of research activities. The research group would be able to exercise an influence upon the educational system only if it has sufficient weight to make its views accepted and to attract resources for further studies. Likewise, in a situation where other activities are competing for the researcher's time, and because research is less rewarding at least in the short and medium term, it is inevitable that the attrition rate among researchers will be high; this can, however, be offset only by the capacity of the system to replace those who leave. The only way to have such a capacity is to reduce the cost of training and this is better accomplished locally.

Third, the philosophy underlying the educational systems now in place in Africa emphasizes general education as do their European parent systems. It is assumed that once equipped with general knowledge, the former students can easily acquire the specific knowledge they need either on the job or through further training. In Francophone Africa, where educational research is still in

its infancy, the possibilities of receiving research training on the job are almost nil because of the small amount of research activities taking place and the lack of higher-level educational research personnel. Because Africans with research capacity potential tend to move on to more rewarding activities, research activities are often left in the hands of expatriates, who are assigned to higher education institutions or to technical units as assistants or teachers by their governments or international agencies. These expatriates are inexperienced and, in some cases, they would not even do the type of work expected of them within their own countries. Young researchers are, therefore, left to themselves and this is one of the reasons that discourages research activities. Graduate training in educational research methods would remedy this situation because it would upgrade capacities and make young researchers relatively autonomous.

Fourth, because graduate training takes place in a variety of countries that are in competition with each other, there is often a mutual downplay of the value of the training that each has received with the result that potential researchers tend to work in isolation. This not only weakens the influence of the research group and its ability to have an effect on national policies, but also it often discourages individual researchers because of the lack of peer support. A local graduate program would probably increase cooperation between the members of the group.

On the whole, the absence of graduate studies removes whatever training effects that students and professors in a community may have on potential researchers in the system. This is why there is no institutional leadership in educational research. In fact, such leadership should normally come from those with higher education backgrounds, but this is possible only if research activities are active objectives; research can become an active objective in such institutions only when research training is also an important objective.

It is clear that training is an important element in any strategy to develop educational research capacity in Francophone Africa. However, the study also shows that unless these programs are well-designed, they may have only a limited policy impact in the region. In reviewing the impact of the studies done by the students in the Francophone West African Research Training Program, their impact on policies appears to be limited. The major reasons are:

- The results are not sufficiently disseminated. Even though the topics researched by the students are drawn from the local institutions' educational concerns, there is little discussion about the students' research within the institutions. Therefore, the importance of the research findings does not get through to the higher policymaking levels.

- Inadequate dissemination of the research findings results from a number of factors. First, there is a general disinterest about the research findings because of the ways in which they are presented. Many research reports done by the students are written in a language intended for acceptance by a specialized audience in North American academic institutions. It is well known that this language is often incomprehensible even to lay North Americans.

Second, not only do institutional leaders not understand the language used in the research reports, but most of them come from a different research tradition. Even when they have had some research training, the educational research methods used by some of the students are often unfamiliar. For example, students have used empirical models based on survey research methods using statistical techniques such as variance and multivariate analysis. Unfamiliarity with these analytical techniques has sometimes raised questions about the relevance and

validity of the research undertaken. Such questions obviously contribute to disinterest in the research findings and tend to lessen the willingness to disseminate them.

Third, disinterest about the research is also provoked by a divergence in research ideology. Some academic programs lead the students to believe that there is one right way of doing research and one valid method for studying a given problem. When the right way and the right method that the student speaks about are different from the ideological position of the user of the research, the user is automatically disinterested, however valid and pertinent the findings may be. This has been found in the case of Francophone West African students. Some of these students believe that they have found the way to solve the country's educational problems and that their research methods are, because of the high degree of sophistication of the analytical tools used, superior to descriptive methods used locally. The reaction from institutional leadership has been to dismiss the students as being "pompous."

- The insufficient level of research training on the part of the users of research is also an important barrier to the use of research findings in policy formulation or evaluation. First, as noted, unfamiliarity with the methods used has led to a superficial rejection of both the methods used in the studies and the research results. A more dangerous effect has been the emergence of conflicts between the researcher and the user that affect their working relationships. In situations where both are at the same level in the hierarchy of the institution, such as in the case of West African students and their institutional leaders, the students' motivations are suspect. The users feel that the students seek self-aggrandizement and aspire to positions currently held by their superiors.
- The insecurity among the leaders is reflected in the type of information some of the research findings produce. In some cases, the findings conflict with earlier claims by the administrative heads of the units whose projects are evaluated. This is especially true for experimental projects. It is well known that job security, and indeed the level of funding that the projects receive, depends on their perceived or real success at the various stages of their development. The information provided to higher authorities depends in some cases on the need to project the appropriate image. The fact that such an image has not been confirmed by the results of the findings is considered to be humiliating by some of the institutional leaders. Not only have they blocked dissemination of the findings but they have wanted to redo the studies to produce results that reflect their opinions more closely.
- The number of educational researchers, both trained and practicing, is too limited for the research findings to have an impact. Because of the various impediments to the use of the results of educational research in policy review and formulation, the educational research community in these countries will have the sought-after impact only when there are sufficient numbers of trained and practicing researchers or administrators with sufficient interest in research activities. In such a case, communication of research findings could be accomplished through workshops, seminars, and informal contacts with others sharing similar interests. Currently, the researcher trained through the West African program functions in isolation. Individual action does not, therefore, have sufficient influence.
- A high turnover among institutional leaders also impedes the use of research findings in policy formulation. There are several cases where institutional leaders have effectively participated in the formulation of the students'

research projects and where the themes studied have related to actions sought by them. Their transfer to other positions has led to a loss of interest in the subjects studied and in the findings.

Increasing Educational Research Capacity

This study has shown that the development of educational research capacity in Francophone Africa may be a complex and difficult task. The need to study the educational process and its effects is evident. It is important to see how Western education instituted during the colonial period can best help fulfill its role in the promotion of economic and social development and how this can be accomplished efficiently. The dependence on the former metropole, however, obstructs the development of indigenous research activities. Because this expatriate education has come with solutions to its problems, an artificial equilibrium has been created that, for many years, has led Africans to consider this education system as a panacea for their problems. Obviously, this has dampened the motivation for empirical experiments, even though these were customary in the traditional system. Educational development has, thus, been characterized by a duplication of research experiments tried elsewhere, even though they may be inappropriate within the local social environment. Any genuine strategy to increase educational research capacity in Francophone Africa must therefore, aim to create the conditions permitting a reversal of this situation.

Development of a Graduate Training Program in Education

There is no graduate training program at present in Francophone West Africa. In fact, even at the undergraduate level, educational studies are restricted to professional teacher training. Very limited attention is paid to administration, planning, and policy studies; to techniques for the evaluation of the internal and external effects of education; or to counseling. Moreover, in most countries, even teacher training activities lack coordination; students receive their basic training in their particular field in the appropriate faculties and their training at the teacher training schools. Because there are no structural relations between the two, although both function similarly, the future teachers are not exposed to education problems before their teacher training courses. Also, the teacher training process is isolated from the social foundations of education. When there is a concern for this, teacher training schools organize their own programs in the respective basic fields; especially in the physical and human sciences. On the other hand, the Faculties of Arts and Human Sciences do have some education-oriented studies; e.g., in education science, which is generally offered at the MA level.

It is clear that not only is there a need for graduate education programs in Francophone Africa, but there is also a need for a restructuring of education studies, even at the undergraduate levels. Teacher training institutions should be transformed into faculties of education where, in addition to professional teacher training, other programs should be organized in administration, planning, and policy studies; techniques for program and teaching evaluation; and counseling. Such programs would provide the education system with the much needed teams of administrators, planners, evaluators, and counselors. A study of the various attempts to reform education in this region suggests that their success has been limited by the lack of such teams. In the teams set up to implement these reforms, in most cases, the members have been trained as teachers and have little or no directly related experience. Short training courses

have been organized both within and outside Africa, but these have proven to be of little value. The graduate education programs should be aimed at developing research capacity in problems related to teaching, school administration and planning, educational measurement and evaluation, and counseling.

Practical Research Training to Produce Useful Policy Information

One of the problems with graduate research training is that it tends to be abstract and, as a consequence, produces studies and skills unrelated to current problems. In spite of views to the contrary, both the types of research carried out and the ways they are carried out are heavily influenced by ideology. It is the prevailing ideology that determines what the quality of the research is to be and what is pertinent. Because acceptance of research work by peers is a condition for successful membership in the research community, the ideology of those in dominant positions defines the kind of training to be given not its relevance to the type of work to be done. For example, the tendency is to suit research problems to research methodologies, instead of the reverse. In the same vein, because the ultimate objective is to duplicate studies for methodological testing, there is often no concern about the social utility of the research done.

The research training program should be problem based. In other terms, individual training programs should be built around concrete educational problems faced in the country or, more specifically, in the institution itself. As such, the trainees should choose their research themes within major educational problems identified by the training team in conjunction with the educational leaders, and these should be presented in the form of regional research programs. One such research program may, for example, be built around the functional literacy programs. Almost all Francophone countries in the region have programs dealing with functional literacy; however, nowhere has there been a serious attempt to study its impact on the transfer of technological knowledge, on production activities, or on societal change in general. A regional research program could be designed through a systematic study of these issues and could be made in each of the countries involved. A comparison of the findings will without doubt produce a wealth of information to help improve the training process and, ultimately, maximize the external effects of such programs. A regional research program of this type will certainly have a greater policy impact in the region than the smaller studies presently done in each of the countries.

This approach permits the training program to accommodate the students' different disciplinary interests and build the interdisciplinary teams required for an effective implementation of educational reform efforts. Pedagogically, it means that, besides areas of basic concern to all, such as the need to comprehend the social foundations of education and the forces that shape its development, the specific theoretical needs of each will be determined in accordance with the areas of the general problem studied. Some may be exposed to pedagogical research methodologies and others to economic or sociological methodologies. To ensure that the training process is as complete as possible, the trainees will, as graduate students, be involved in data gathering for the data bank that will be used for individual studies. To ensure a maximum generation of useful policy information, the different projects could be programed so that each new group of students studies a different educational problem or does a follow-up analysis

of an earlier study. Each of the projects would be put under the leadership of a team of researchers, composed of members of the training team.

Advantages of Team Training

The training approach not only facilitates the constitution of the interdisciplinary teams, but it will also encourage cooperation between institutions and researchers interested in similar problems. The Malian and Senegalese cases show that both are engaged in similar educational experiments. The proposed approach will encourage an exchange of information about national education projects. In fact, it may even be a good idea to rotate the teams so that students do their studies in other countries than their own. This approach will tend to reduce the level of isolation among the potential researchers in the region. As stated earlier, such isolation tends to discourage the researcher because of inadequate peer support.

Creation of a Documentation Centre

The creation of a documentation centre to serve as a clearing house for educational literature will also solve one of the most persistent problems faced by researchers in Francophone West Africa: the absence of documents on the evolution of the educational systems in the region. A significant number of documents are produced on various educational problems, and statistical information is periodically compiled on the evolution of school enrollments in many of the countries. Paradoxically, however, such documents are more readily available in Paris and elsewhere than in the countries where they are produced. In some cases, documents imported from abroad are even more easily available in these countries than what is produced locally. A development of educational research capacity in Francophone Africa will, therefore, have to be accompanied by the creation of a documentation centre to serve not only as a library but also as a clearinghouse for educational literature in the region.

Implications for Funding Agencies

The Malian and Senegalese cases show a very limited involvement in educational research activities by international funding agencies in both countries. This is true in other Francophone African countries as well. There appears, however, to be some interest in more involvement in recent years. Agencies funding educational projects have encouraged a development of research activities in support of their own involvement; in fact, many of the projects that they fund have built in evaluative research components. Agencies interested strictly in the development of research activities have also begun to involve themselves both in educational research training and in funding local research projects.

In general, this limited effort has been carried out in a diffuse way. Competition among the agencies has complicated the process for the recipients. Many recipients in these countries complain about the parade of investigators who precede and follow any funding decision. Most of the agencies are interested in the same issues, yet each agency uses the same type of feasibility investigation, even when the level of funding involved is only of limited significance. The result is that the heads of institutions in these countries spend a sizable percentage of their time in responding to questions from the study investigators. In general, the cycle is never ending; the recipients, who are lured by the promises of the sought-after foreign exchanges, become, in the process, perpetual agents for project investigators.

Not only is there competition among the funding agencies for involvement in the countries; another complaint made is that, in general, most of the investigators have preconceived conclusions, so that the environmental studies are carried out merely to legitimate them. Indeed this cannot be otherwise under the present situation when in most cases the overall policies of the funding agencies are determined in response to the desires and views of their constituents. The insistence on functional literacy programs in educational funding policies prevalent in most agencies did not result from educational research in developing countries, but from the perceptions and the needs of the educational project funders. Thus, in Mali and Senegal, such projects were introduced and the funding provided without a serious study of their social and economic implications. Because of competing philosophies or national interests, both cases have shown that such programs are dispensed over a number of institutions, and each of the institutions or ministries appears to receive funding or technical assistance from a different international organization. The responsibility for this dispersion lies in the countries concerned; it must be remembered, however, that the attraction to these projects in these countries is not necessarily to what they are intended to accomplish in the long run, but to the financial resources they bring in the short run.

But even when there is a local long-run interest in such projects, and even when serious attempts are made to study the conditions of their realization, the complaint is that the studies are often contracted to individuals who not only have a very limited experience about the process, but who have no knowledge about the environment. Because consulting contracts are generally of short duration, such individuals have just enough time to begin to understand the conditions in the local environment when they have to leave. Consequently, such studies are sometimes useless and, when they are not superficial, they tend to duplicate similar ones done in the past or currently being done.

The process is complicated, because the individuals associated with these projects change periodically. Because the newcomers either know nothing of what has been done in the past or are of different ideological persuasions, it implies that the discussions of the projects have to begin again or the projects have to be reviewed by the newcomers. This may be a contributing factor to the fact that educational reforms, which in most part are funded by such international organizations, have remained at a perpetual experimental stage: each experiment is followed by another because its results are inconclusive, partly because the preceding experiment stopped because of a change in personnel.

This constant change in policy orientation and personnel in international funding agencies is an important contributor to the instability of action in these countries. At one time, training may, for instance, have been singled out as the necessary condition for the development of research capacity in a given region; because of changes in personnel in the agencies, the emphasis on key variables for the development of education may abruptly change from training to networking before a sufficient number of researchers have been trained. The rejection of the previously accepted conditions leads to frustration and results in a questioning of the motivation underlying the activities of the agencies. This is part of the reason why these countries limit their interests to the short-run gain represented by the financial resources that come with the projects.

The foregoing suggests that the manner in which the activities of funding agencies are organized contributes negatively to the development of research activities in general and of educational research in particular in Francophone

Africa. The funding agencies, because they offer financial assistance, play a major role in the orientation of educational policies and in the determination of priorities of the limited educational research taking place. At the same time, however, they also obstruct the development of educational research, either because they tend to make the recipients of their funds completely dependent on them or because the constant competition among them and change in personnel only increases incoherent domestic research policies; it also reduces the funded educational experiments or research into simple objects to attract funding.

To maximize the impact of the available limited funding on the development of educational research in Francophone Africa, the funding agencies must adopt a new approach. First, they should be better coordinated. Instead of each one continuing to go its own way, while doing almost the same thing, funding agencies should pool their resources. This pooling of effort should include both funding of educational actions and funding of educational research.

Second, this coordination should not be based on their own set of priorities, but on those identified by the recipients. In other terms, instead of continuing to meet with each other to see what they can do, a process that ends up by their establishing priorities mainly on the basis of their own needs, they should base their assistance policies on the needs identified by the prospective recipients. For this reason, funding agencies should help in the establishment of a regional commission on educational development. Because this commission would identify the major educational problems in the region, it would also suggest priorities on which individual governments in the region should invest and that would guide the assistance policies of the external funders of educational activities.

Third, funding agencies should adopt long-term strategies. The short-term strategies currently followed lead to the abandonment of worthwhile activities (because of the transfer of personnel committed to them) before the goals of the project are achieved. Again, the proposed commission would help in the establishment of long-term strategies that would permit project completion.

An example of such long-term strategy is the one proposed here, to develop educational research capacity in Francophone Africa. The elements of such a strategy should be determined by this commission and the funding agencies should channel their assistance through it. For example rather than continue to award isolated small-scale or large-scale research funding, intervention should be integrated. The agencies should fund a number of research projects identified by this commission and the training institutions should use the data from such projects in their training programs. This allows for the achievement of a number of objectives: (a) funding for the practicing researchers, (b) training material and research experience for the students, and (c) production of useful information for policymakers. Obviously, such a strategy can only be long term; because many of the countries are still lacking in high-level labour, the rate of attrition among researchers will continue to be relatively high. Full potential will only be reached when the necessary critical mass of high-level labour has been achieved.

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Technical editing: K. Kealey-Vallière